

STICKING TOGETHER 46
NEW AGE TRIBES

WEIGHED DOWN 58
ALL ON A FIRM HEAD

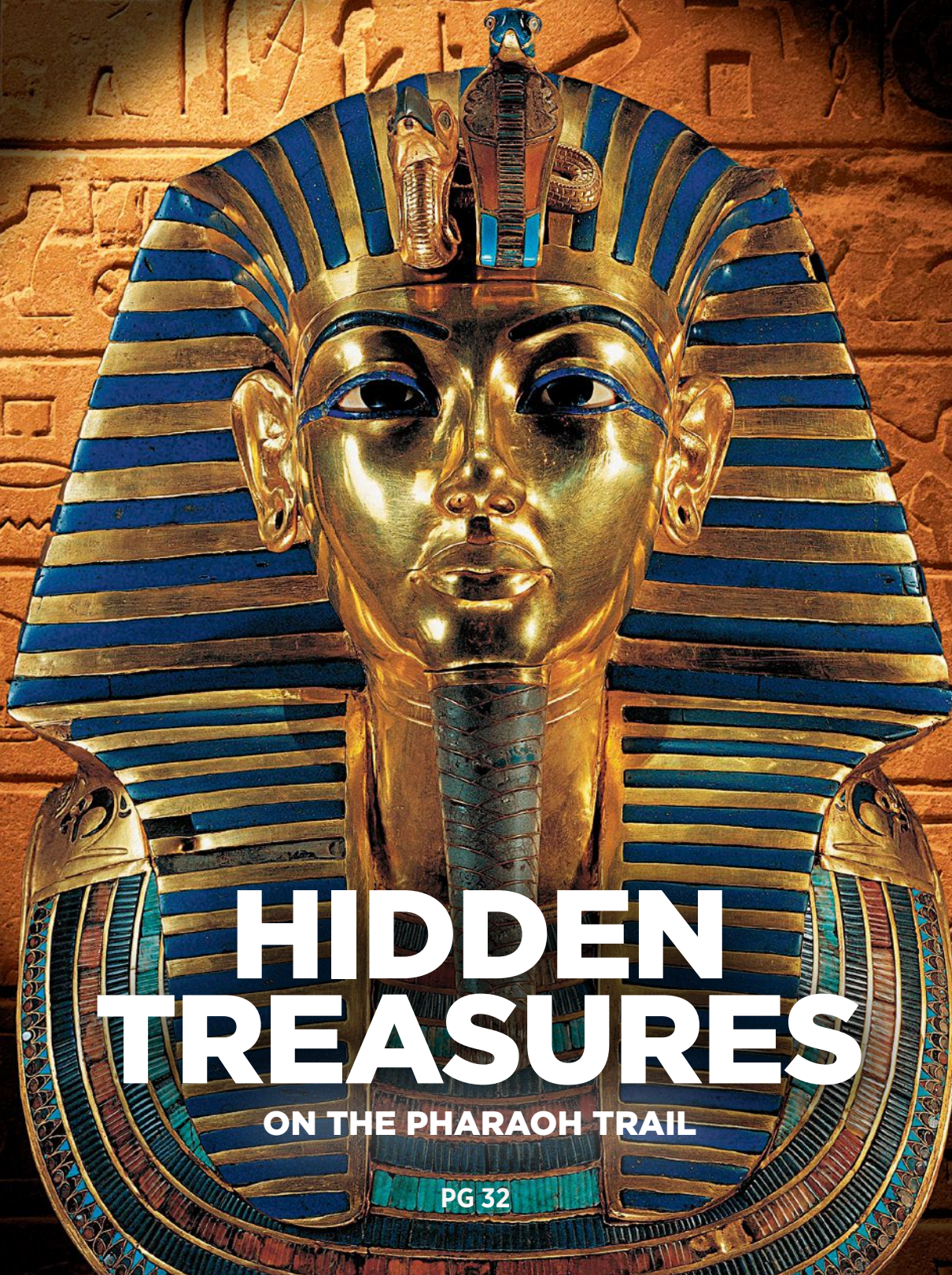
SIMPLY SIMIAN 74
THE LAST SURVIVORS

RAMP REALITIES 90
AERIAL FEATS GALORE

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HIDDEN TREASURES

ON THE PHARAOH TRAIL

PG 32



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SRM JOINT ENGINEERING ENTRANCE EXAMINATION - SRMJEEE

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Aerospace Engineering,
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Civil Engineering, Computer
Science and Engineering,
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Engineering,

Electronics and Communication
Engineering, Electronics and
Instrumentation Engineering,
Genetic Engineering,
Information Technology,
Mechanical Engineering,
Mechatronics, Nanotechnology,
Software Engineering

B. Arch | B. Des

M. Tech | M. Arch | Ph.D

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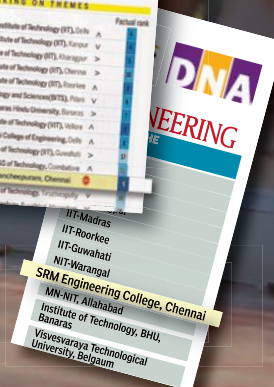
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Online (50 cities) : 19 to 22 April 2015

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VOLUME 1 NUMBER 13

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A STORY IN PICTURES

I remember flipping through a copy of *Harper's Bazaar* on a long-haul flight a few years ago. This was before the magazine had launched its Indian edition and become such a huge success. What surprised the reader in me as I turned the pages was that the magazine offered very little to read. A major chunk consisted of just photographs, all very glamorous and good-looking, and gave the impression of being a photo album, less a journal of convention.

I should have finished my flip-through in 10 minutes or less, but surprisingly, my "read" lasted for most of the flight. No, I didn't develop an interest in women's fashion that day. But I did learn how photographs can tell stories without using words at all. The images I saw reflected personalities and spelt out body language: colours created different first impressions, and how slight self-consciousness was far more appealing than confidence.

Discovery Channel Magazine has always used the medium of visuals to create a larger-than-life appeal to the stories we offer. Some say we use award-winning photography to sugarcoat information-heavy features; we feel we make our articles more intriguing by playing up pictures that pique your imagination.



The issue you hold in your hands is particularly easy on the eyes. From Gregory Basco's recent award-winning Nature and Art image of a frog "chilling" in a rain forest on p10, to a picturesque travel through Egypt's dramatic past, you're going to turn back the pages for a second look even after you've finished reading a story. There are close ups that will allow you to understand the distinctiveness of tribal face art, and slightly scary shots of the world's most challenging airport runways. My favourite, however, has to be pictures of unusual headgear from around the world that could well be seen in a high fashion magazine, but if you look closely, you will discover that each image tells a life story and delivers a poignant message.

Dear reader: Just in case you don't read very much when you first go through this magazine, don't fret. We're sure the pictures will intrigue you to come back for more.

J.S.

Jamal Shaikh
Editorial Director

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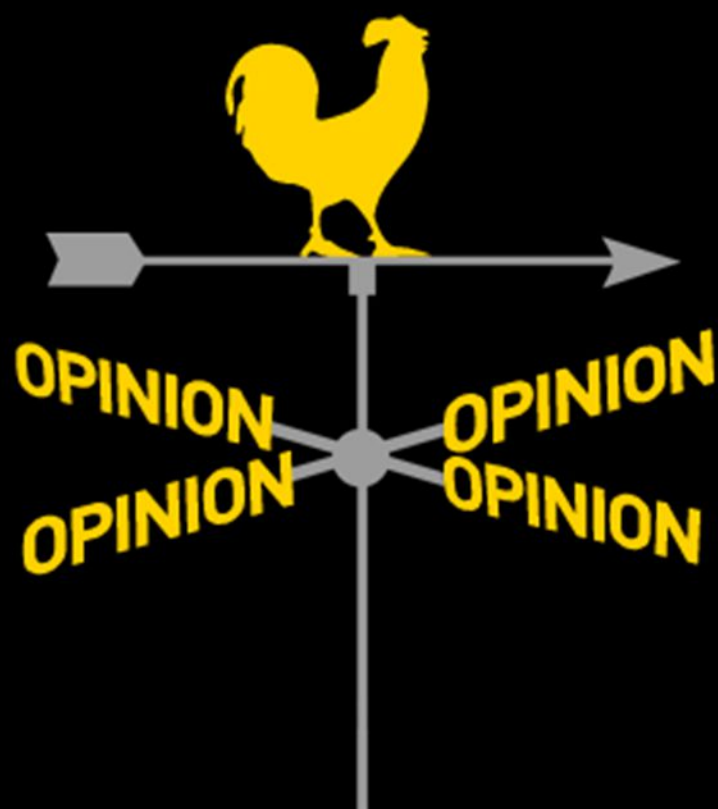
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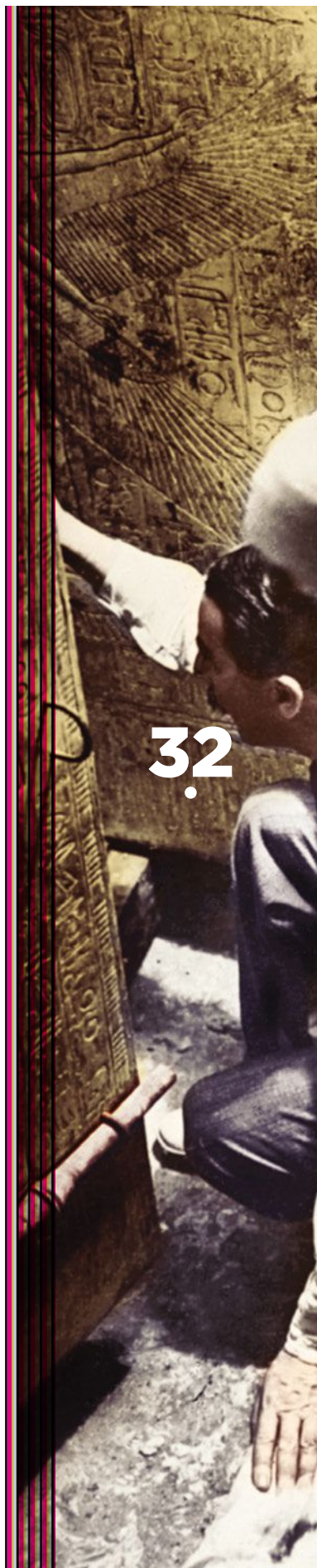
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CLING ON, KERMIT

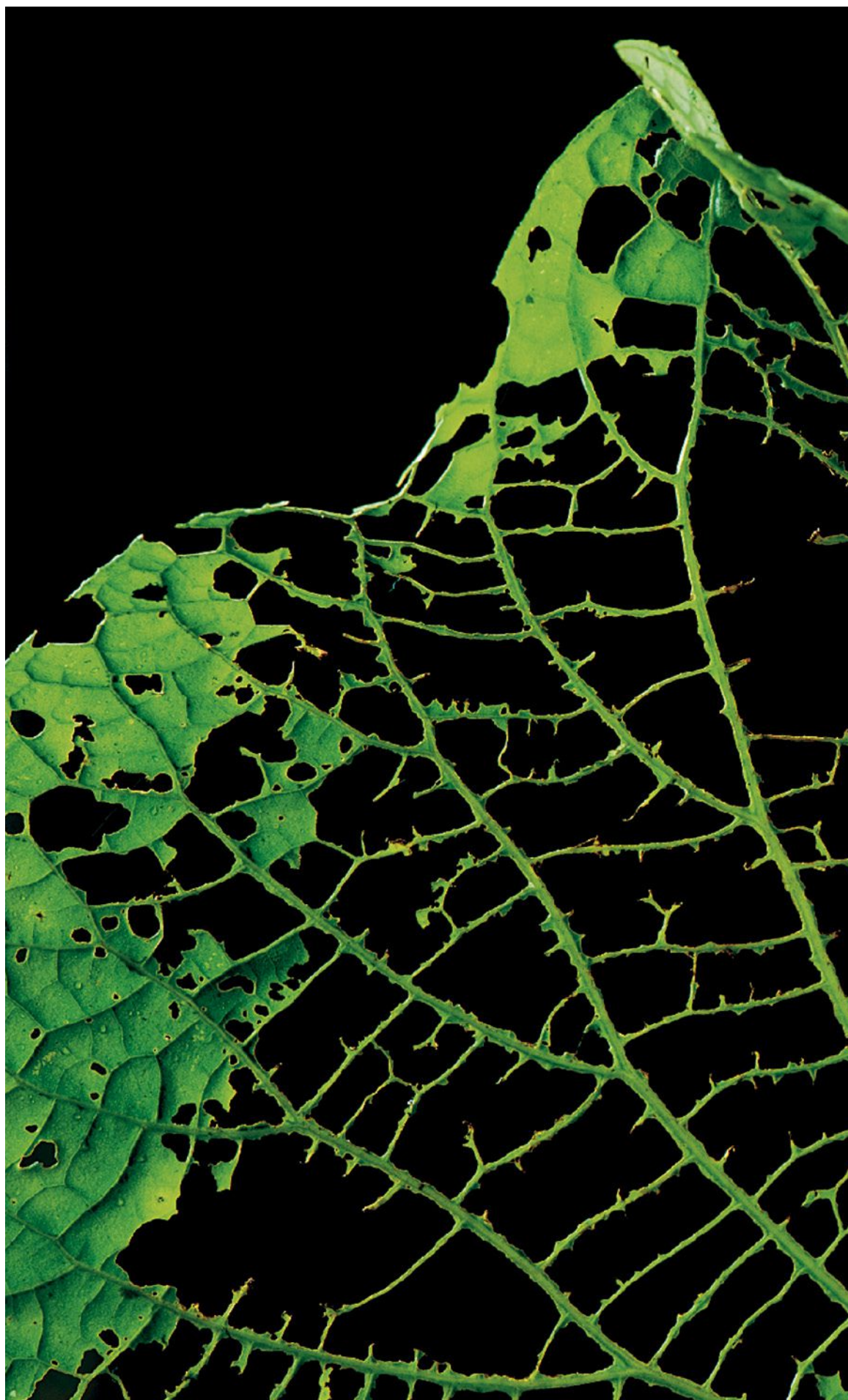
Is it any wonder that **out of 20,000 photo entries from 50 countries, Gregory Basco's shot found acclaim in the Nature's Best Photography Windland Smith Rice International Awards?** Basco walked away the winner for the Art in Nature category, for his stunning rendition of an emerald glass frog, chilling in the Monteverde Cloud Forest Reserve in Costa Rica. True to their name, these amphibians are delicate and beautiful, with shimmering translucent skin. Being 2.5 centimetres long, they don't exactly stand out in a forest.

"Glass frogs are very hard to find, and I spent more than an hour one night searching for them in a Costa Rican cloud forest," Basco told press.

"I thought the combination of the glass frog and the skeletonised, caterpillar-eaten wild pepper leaf made for an interesting composition." **Most close-up, macro photography aims for a tightly framed image. Basco went for a different style: "I backed off for a more graphic, environmental portrait of this elusive nocturnal frog."**

Lesson learnt, budding photographers. Take a step back, nab top prize.

PHOTO: GREGORY BASCO





FRONTIERS



PHOTO DREAMTIME

DAMN YOU, STUPID BRAIN! DON'T ALWAYS TRUST THE GREY CELLS

Inherent errors of judgement, thanks to cognitive biases, leading to irrational decisions can happen everyday.

If you are going for a salary negotiation anytime soon, don't forget that the first number thrown on the table sets the range of reasonable negotiation. The counter-offer, or second move, will be anchored to react to that first figure. "Most people come with the very strong belief that they should never make an opening offer," Northwestern University management professor Leigh Thompson said, "Our research shows that's completely backwards. The guy or gal who makes a first offer is better off." Feel like getting depressed about humanity's illogicality? There are dozens

more biases out there to depress and infuriate you.

The Illusion of Control for instance. We think we have it, but we don't. A sad fact, but one responsible for basically every great work of art ever, from *Macbeth* to *Breaking Bad*. Here's another one: **the Dunning-Kruger Effect**, where people who have little knowledge think they know more than they do. Basically, idiots who don't realise they are idiots. We all know one (and if you don't, it's probably you!) And then there's **Hyperbolic Discounting**, which basically means that people prefer smaller payouts sooner, than larger payouts later. You would rather have ₹5,000 now than ₹50,000 after a year, wouldn't you?

THE GRID

STRANGE AND SERIOUS EVENTS FROM ACROSS THE WORLD

ASIA-PACIFIC

AMERICAS

EUROPE

MIDDLE EAST/AFRICA

BIRTH

GOOD BREEDING:

Singapore is celebrating its 50th national anniversary in a myriad of ways this year, and that's good news for any local baby born in 2015. Local bank POSB will offer goodie bags for babies that includes clothes, scrapbooks and books as well as a US\$8,000 prize for five babies. All part of the norm for a young country that is trying to spike its birth rate, one of the lowest in the world.

WEIGHTY MATTERS:

Big baby, bigger brains later in life. So says a study published in the American Economic Review, which explored the link between birth weight and cognitive development. Researchers twinned birth and school records for 1.3 million Florida-born kids. Higher birth weight babies scored higher on school tests. Low-birth weight babies are also more likely to have autism, psychiatric problems and lower promotion prospects later in life.

PUSH ON HOME:

Mamas-to-be, where should you give birth? According to the UK's new National Institute for Health and Clinical Excellence guidelines, you should give birth in a midwife-led unit and, if it's not your first baby, at home. They say a home birth is less stressful for mothers, while doctors, the report tuts, are more likely than midwives to use forceps or spinal anaesthesia, which carry risks of infection.

C-SECTION SHARK:

Picture this: a woman spots a dead shark washed up on a Cape Town beach. But the shark's tummy is wriggling. Along comes a man who cuts open the stomach with a pocket knife and delivers three baby sharks (handling them with care, as they are born with a complete set of teeth). He then sets them free into the sea, where they would naturally have swum away from their mother anyway. Yes, you can view it all on YouTube.

ELECTRICITY

DOWN UNDER WONDER:

Aussie scientists have set a shocking record, recently announcing that they succeeded in converting sunlight into electricity with 40 percent efficiency. It might not seem like much, but progress is slow in this field. In 1989, the world was in awe of a photovoltaic system that had a 20 percent efficiency. Here's hoping the next doubling of power doesn't take another quarter of a century.

WEAR THE ZAP APP:

Are your 2015 resolutions flagging? Pick up a Pavlok wristband, the brainchild of a US company that describe their wristband device as "a personal coach on your wrist". Pavlok can zap you with electricity to keep you productive in a lot of ways. As the website proclaims, Pavlok is linked to your smartphone so it can "shock you when you text your ex-lover," or "beep loudly any time you step inside of a McDonald's".

PLUG-IN PLANT: Serbia might not seem like a hotbed of tech innovation, but dozens of "Strawberry Trees" prove that wrong. Strawberry Energy, a local start-up, has littered parks and public squares with tree-like charging stations, bristling with USB sockets and their own Wi-Fi. Milos Milisavljevic, the 26-year-old founder, wants his trees to become more — they are already equipped with sensors that measure pollution and UV radiation.



MAGIC

GURU'S RETURN:

Ashutosh Maharaj was a Hindu guru popular in northern India. Though he died in January 2013, he was recently in the headlines: his body has been lying in a freezer, and will continue to do so. Indian high courts granted an appeal for the cremation of the body to be stayed until February. Why are his followers insistent that the body should remain whole? They believe he is not dead but in a state of deep meditation, and will return to life.

COOLNESS, CUBED:

American street magician Steven Brundage made his speeding ticket disappear, after he was stopped by cops for speeding. Having told the officers he was a magician, they asked for a trick. So he solved a Rubik's Cube in 20 seconds. Then he went one better — and solved it in one second, simply by tossing it up in the air. His feat prompted the cops to exclaim, "Holy s...!" and forget the ticket. (And yes, it's on YouTube).

ROOM ON THE BROOM:

Always wanted to join Hogwarts as a witch or wizard? This April you can, at Czocha Castle in Poland, which will be hosting its second annual live-action role play dubbed "The Czocha College of Witchcraft and Wizardry". You'll get a chance to play quidditch, attend magic classes and mix potions. But somehow, we fear it won't be quite as magical as the real thing. Still, maybe we're just being cynical ol' Muggles.

DARK FORCES: Belief in witches is alive and well in Ghana — and that's causing real-world problems. The government recently disbanded several "witch camps" scattered around the country, where women accused of being witches languish. Six camps alone held 681 women, and potable food and water were scarce. Treatment of suspected witches in Ghana includes public ridicule, denial of opportunities and often banishment.

Bizarre?

IF AT FIRST YOU DON'T SUCCEED AT UNCOVERING BRAND-NEW ANIMALS OR PLANTS IN YOUR BACK GARDEN:



BREED ONE

Like a lion and tiger can create a liger cub, see if a mouse and pigeon can birth a... flying rat?



LEARN VENTRILOQUISM

"I know it looks like a regular cactus, but this one can talk! Say hello, Larry." (Hello. I am a cactus)



STALK REAL ZOOLOGISTS

Join expeditions with trained zoologists and maybe you can become a co-discoverer of their newest find

CLOUD 9

RECENTLY, TWO PROFESSORS, HAL HERSHFELD AND ADAM ALTER, COMPILED RESEARCH THAT SHOWED THAT YOU ARE MORE LIKELY TO MAKE BIG LIFE DECISIONS THE YEAR BEFORE YOU REACH A MILESTONE AGE LIKE 40

8 MILLION

NUMBER OF MALE USERS THEY CATEGORISED ON ASHELYMADISON.COM, A DATING WEBSITE, AS LOOKING FOR AFFAIRS. MEN AGED 29, 39, 49 AND 59 WERE 18 PERCENT MORE LIKELY THAN OTHER AGES TO REGISTER ON THE SITE

9

MORE PEOPLE KILL THEMSELVES IN THE US AT AN AGE ENDING IN 9 THAN ANY OTHER AGE

500

OF 500 RANDOMLY PICKED FIRST-TIME MARATHONERS, THEY FOUND 25 PERCENT MORE "9-ENDERS" THAN AT ANY OTHER AGE

STREET FOOD, WITH A TWIST

When dung beetles keep you healthy!



that harbour human diseases — this littered food waste becomes a public health, environmental, and financial burden," wrote the study authors.

A study has found what picnic-goers have known for centuries — insects eat an absurd amount of our food waste. And by absurd, we mean they eat the equivalent of **60,000 hot dogs per year in one corner of New York City alone**, according to researchers from North Carolina State University. To arrive at that figure, they sneakily dropped samples of potato chips, cookies and hot dogs in 45 parks and street spaces in the Big Apple. Half the samples were placed in adorable little cages, so that only arthropods could access them. The remaining half was left as a free-for-all smorgasbord open to all animals. Not only did street-walking insects remove two to three times more food in a day than park insects, they also out-ate rats in most of the urban environments. "If left uneaten — or **if eaten by animals**

DUNG BEETLES improve soil fertility and, obviously, eat dung so effectively that Sydney councils released 40,000 of them in parks to clean up dog faeces!

MALARIAL MOSQUITOES, some argue, are responsible for keeping thick equatorial rainforests free of human settlers, thus preserving the ecosystem. Science writer David Quammen says nature-lovers should say thanks to 10 million generations of jungle-loving, blood-sucking insects.

"CYBORG" COCKROACHES are being developed by researchers, equipped with electronic backpacks that allow them to be remote-controlled. They could soon be helping to save lives, detecting earthquake victims in rubble.



3, 2, 1...Ignition!

A Soyuz TMA-15M spacecraft ferries the crew of the Inter-national Space Station to their new home in a quiet spot in Kazakhstan. It blasts off from the Baikonur cosmodrome and is one of the busiest launch pads in the world.

Quote Unquote



"IF DETECTED BY THE AUTHORITIES, PADDINGTON WOULD IN ALL LIKELIHOOD BE DETAINED IN ONE OF OUR VIRULENTLY MULTIPLYING PRIVATE IMMIGRATION DETENTION SPACES"

COLIN YEO BARRISTER

When he watched the 2014 film *Paddington*, based on the Michael Bonds books, this barrister specialising in UK immigration law took the "plot holes" to task. Such as, this Peruvian bear in a raincoat who stows away at a London railway station after fleeing his own devastated country is an illegal entrant to the UK, "and as such commits criminal offence under section 24 of the Immigration Act 1971."

OTHER BELOVED HEROES FOR KIDS (AND THEIR REAL-WORLD FATES)



ALF THE ALIEN: DISSECTED IN AREA 51



STUART LITTLE: POISONED BY AN EXTERMINATOR



PETER PAN: CLONED IN A LABORATORY FOR HIS ANTI-AGEING PROPERTIES

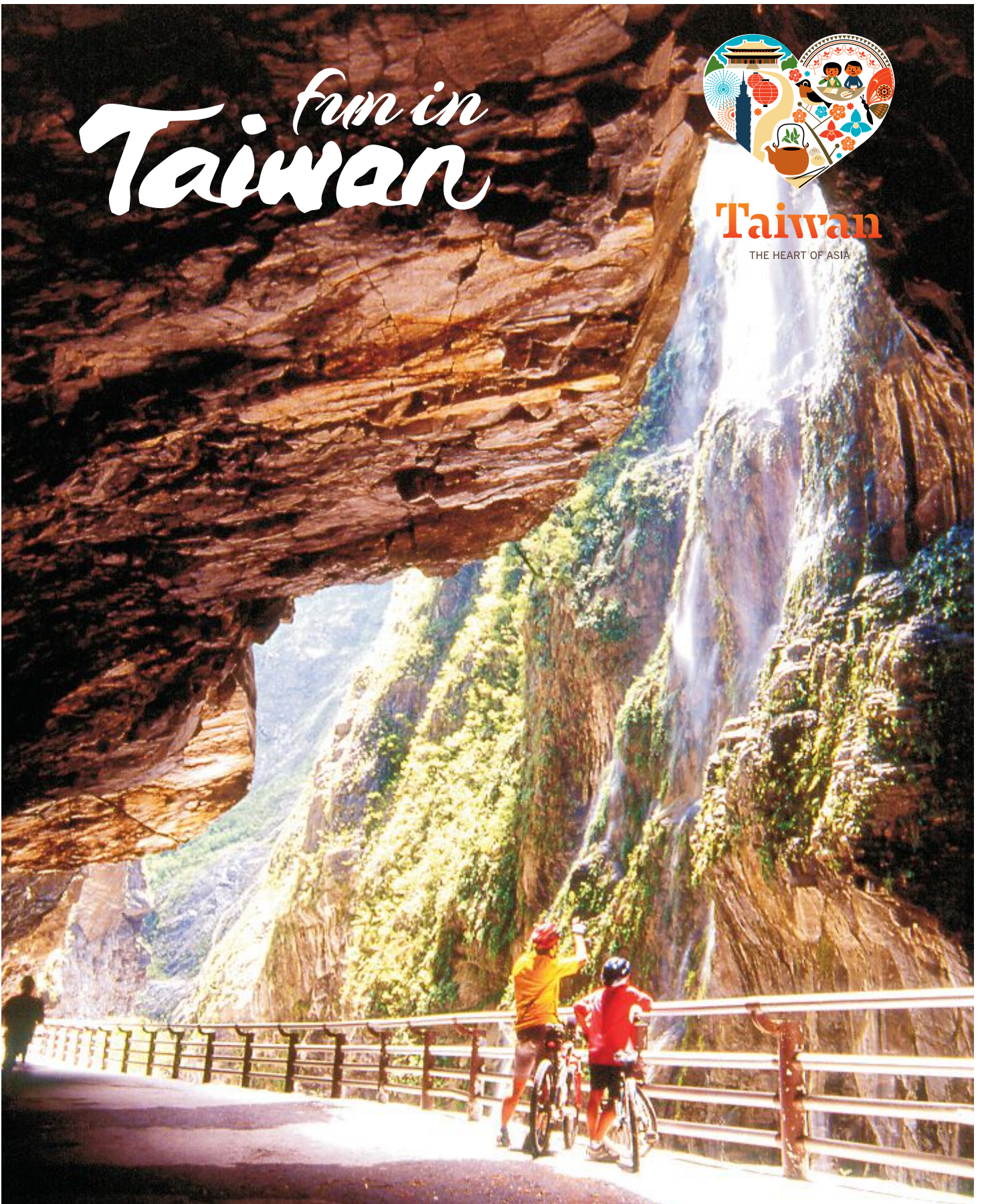
PHOTOS: REUTERS (SPACECRAFT)

Fun in **Taiwan**



Taiwan

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MASS
PRODUCED



GETTING SNIPPY

If all you know about scissors is that you should not run with them, cut it out

1



TRAUMA SHEARS

Used by paramedics, these are tough enough to cut through seatbelts, casts and even coins. They are also designed with a blunt tip so they don't nick into skin. Parents may want to invest in a pair to unlock plastic kid's toy packaging (the strongest material known to man!).

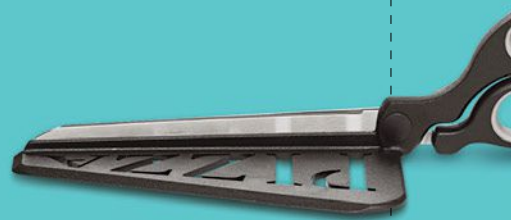
2



CEREMONIAL SCISSORS

Used to cut the red tape at otherwise-dull ceremonies — though not at the 1932 opening of the Sydney Harbour Bridge. Instead a pro-monarchist protestor, slashed the ribbon with a sword before the slack-jawed Premier could get in a snip.

3



PIZZA SCISSORS

So awesome we're tempted to write about them in all-caps. At the cost of just US\$20 or so, you can cut your pizza and have it slide conveniently onto the adjacent rack at the same time. The same time, people! Truly we live in an age of miracles.

4



MOUSTACHE SCISSORS

They don't look much different from a normal pair, do they? Presumably you buy a pair just for trimming your moustache (so you don't end up cutting lettuce with the same pair of scissors that have slipped up your nostrils). Likely to be found in a hipster's bathroom cabinet.

5



SURGICAL SCISSORS

"Retained surgical items", or when surgeons forgetfully leave their tools inside a patient, is disturbingly common. There are some 4,000 cases in the US each year alone. Some of the items are soft, like surgical sponges. Others are razor-sharp stainless steel scissors like these.

6



MICRO-SCISSORS

If these look like the sort of a tool a mad scientist would wield, you're not far off. A narrow axis of the spring-loaded blades makes for an extremely fine snipping action, attractive to hobbyists — and researchers dissecting the thread-like cartilage of lab rats.

Cutting-edge tales

IN 1845, A FRANKFURT PHYSICIAN NAMED HEINRICH HOFFMAN PENNED *STRUWWELPETER*, CRAMMED WITH GORY MORALITY TALES FOR YOUNGSTERS. IT INCLUDED A LESSON ON HOW NOT TO SUCK YOUR THUMB, OR A DEMENTED MAN IN RED PANTS WOULD SLICE YOUR DIGITS OFF. "SNIP! SNAP! SNIP! THE SCISSORS GO; AND CONRAD CRIES OUT — OH! OH! OH! SNIP! SNAP! SNIP! THEY GO SO FAST, THAT BOTH HIS THUMBS ARE OFF AT LAST." DELIGHTFUL READING FOR THE YOUNGSTERS, WE MUST SAY.



PHOTO: EVERETT/GETTY IMAGES (TRANSFORMERS); ICONS FROM THE NOON PROJECT: JAMES FENTON (WORKER), NIKKI RODRIGUEZ (IRON); EDWARD BOATMAN (STEAM); DMITRY BARANOVSKY (CLOUD)

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HOW TO AVOID HAVING A BACKPFEIFENGESICHT



ACHTUNG: GERMAN WORDS AHEAD!

When a cocoa-hole leads to Nutella...

The Germanic lingua franca is often lauded as a language loaded with words with no English equivalent. That sentence, we admit, is a mouthful. But not as much of a mouthful as:

Ohrwurm (earworm): a ridiculously catchy tune
Example: Heinrich, have you heard that new James Brown song? It's a total ohrwurm!

Kummerspeck (grief bacon): the weight gained by binge-eating when a relationship ends, or during other times of sadness
Example: I've gained

fifteen kilos of kummerspeck since Heinrich left me at the James Brown concert

Backpfeifengesicht (a face that cries out for a fist in it): yes, that one is pretty self-explanatory

Example: Heinrich got sent to jail for ten years for assault, but hey, that elderly woman had a backpfeifengesicht

Sitzfleisch (seat meat): a hefty posterior
Example: I've got sitzfleisch galore since I put on all that kummerspeck in jail for hitting that backpfeifengesicht

*Sounds like anonymous, get it?

Concepts we need words for:

Xgyltrysh: The instant migraine you experience when you try to read, let alone speak, the word backpfeifengesicht

Ano-name-ous*:

The sweaty fear you feel when you meet someone for the nineteenth time but it would be too awkward, at this point, to admit you can't remember their name

Cocoa-hole:** A gluttonous craving that can only be filled by eating the exact right snack, usually Nutella

**Not as dirty as it sounds

Spoiler Alert!

Practice the slo-mo tackle to enjoy the *Game of Thrones*

It's going to be a great year for TV. *Breaking Bad* spinoff *Better Call Saul* is premiering, *True Detective* should be returning, and *Game of Thrones* will make a bloody comeback. Not to mention the upcoming movies. The problem is, how are we supposed to avoid the inevitable spoilers? We've got you covered, buddy. Oh, also, it turns out Bruce Willis was dead the entire time (*The Sixth Sense* came out 16 years ago!).

show, pass out name tag stickers. Update them day-by-day to let the world know which episode you're on. Feel free to add a section for punishments for loose-tongued offenders. ("Spoilers will be devoured by fire ants")



TRAILER TRASH

We've got a bone to pick with movie trailers, which are now routinely three minutes long and reveal the entire plot. To use two Tom Hanks movies as examples: the trailer for *Cast Away* had a character expositioning to the returning hero, "You were on the island for four years!" And the trailer for Ewan McGregor's yawn-fest *The Island* gives away not one, but two, major twists, including the fact that — look away now! — there is no island, and Ewan McGregor is a clone. And these revelations didn't appear until the last third of the movie so if you've watched the trailer; yep, you've been spoiled.



APP CENSORSHIP

Install Spoiler Shield, sign in with Twitter and Facebook, and set up a list of shows you want to shield. If any blabbermouth's update mentions the show, it will pop up a word-covering shield. Or, install TweetDeck for Twitter, which lets you hide tweets with certain words in them, like #RedWedding



THREATENING STICKERS

Is there a more nefarious spoiler-zone than the office watercooler? If your work buddies are all enjoying the same

BONUS TIP

If all else fails, when someone says, "I can't believe *Mad Men* last night. Don Draper slept with..." "just bellow, 'Nooooo!' and tackle them in slow-motion.

THREE REASONS WHY

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VARSITY BLUES



25,000

LIBERIAN STUDENTS RECENTLY TOOK AN ENTRANCE EXAM TO ATTEND THE UNIVERSITY OF LIBERIA

100%

OF THEM FAILED. "THE STUDENTS LACKED ENTHUSIASM" WAS ONE UNIVERSITY OFFICIAL'S EXPLANATION

200,000

THE COUNTRY IS STILL RECOVERING FROM AN INTERNAL CONFLICT THAT SAW OVER 200,000 CITIZENS KILLED AND TWO MILLION DISPLACED

QUIRKY FINDS UNDER LONDON

HAIR: Millions of passengers shed their hair in the busy London Underground. Night-time cleaners called "fluffers" collect the industrial amounts of detritus, which present a fire hazard.

HAIR COLLECTORS: Local artist Henry Hudson collected Underground hair for six months, building up a massive hairball in his studio. "It was horrible. I tried putting a comb through it. Impossible." So, he made a plaster cast of his head, filled it with hair, and put a light bulb in it.

MUTATED MOSQUITOES: When the Underground was built in the 19th century, it was colonised by *Culex pipiens* mosquitoes. In decades they evolved into a new species, *Culex molestus* — a process that usually takes millennia.



Quote Unquote



"THE ZOO IS ABSOLUTELY CHEATING US. THEY ARE TRYING TO DISGUISE THE DOGS AS LIONS"

The Barking Lion!

This is what happens when you try to pass off a Tibetan mastiff as an African lion. People get angry. That was certainly the case when the People's Park of Luohe, a Chinese zoo in Henan province, attempted the sneaky switcheroo. Zoo manager Liu Suyu told the Beijing Youth Daily the dog belonged to a friend of a zookeeper who was on a business trip, and needed a place to keep his pooch. The situation was discovered by a young boy being taken around the zoo by his mother, who was teaching him the sounds various animals make. "[My son] said they were fooling us because the 'lion' was actually barking," she later told reporters.

ATTACK OF THE FAT BLOB

For the love of all that is good, please refrain from eating while you read this story. You might spill your food in disgust, and have to clean it up with (urgh) baby wipes!

"While we've removed greater volumes of fat from under central London in the past, we've never seen a single, congealed lump of lard this big clogging our sewers before," a supervisor for British utility company Thames Water recently told the press.

His team had just completed the Herculean and

unenviable task of clearing a sewer of a 15-tonne "fatberg", which he described as "wrongly flushed festering food fat mixed with wet wipes". It was discovered after residents in nearby flats reported trouble flushing their toilets.

Thames Water shared news of the bus-sized chunk of lard in the hopes that

people would stop flushing food and trash down the drain.

Another spokesman described how it took three weeks of solid work, using powerful jets of water to break the massive slab of fat down. It was then sucked into a tanker.

And what then? Thames Water is working on a scheme for the future, whereby sewer grease

will be fed into one of the world's biggest fat-fuelled power stations. It's thought the East London station could eventually power 39,000 homes. All thanks to "fatberg shovellers" who harvest the underground globs.

A happy ending, right? Oil's well that ends well. You can go back to your chili cheese nachos now.

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ANTI-SHARK GEAR

Shark Month got you scared your next dive will end like *Jaws* (pictured)? Pack some tools to avoid becoming fish food



ELECTRO-FIELDS

Sharks have sensory organs attuned to electric fields, which are known as ampullae of Lorenzini. Battery-powered units clipped to divers may flood these receptors with an annoying white noise, keeping the sharks away.



EXPLODING KNIFE

The WASP Injector Knife is as scary as it sounds. When a diver stabs a shark, the knife fires a compressed blast of gas that explodes outwards (causing damage), freezes the organs and floats the shark to the surface.



STRIPES

This wetsuit, from Shark Attack Mitigation Systems, aims to stop sharks from attacking surfers. The stripes are designed to present a surfer as unlike any kind of viable shark prey, or even as a dangerous food option.



DEATH PERFUME

Dead sharks emit a scent their brethren can pick up, and they don't like it. Experiments found an aerosol can of artificial "essence of dead shark" dispersed sharks for over 10 minutes.



CHAINMAIL

Sharks usually like to have an experimental soft nibble before they chomp down. Many diving suits out there use steel, or are festooned with sharp spikes that make for a mouthful of "ouch".

AC/DC

The tool to soothe an annoyed great white shark, should involve something like shark morphine, right? Nope. A tour operator in Australia has found that these sharks become "more inquisitive and a lot less aggressive" when you pump the water full of AC/DC songs. Specifically, *You Shook Me All Night* Long and *Back in Black*!

Opening Area 51

It's been called Paradise Ranch and even Dreamland, but you probably know it as Area 51. Now, the world's best-known secret government facility, linked to alien cover-ups, has gone official. For the first time in almost 60 years, the Central Intelligence Agency (CIA) has officially recognised the existence of this military base in Nevada.



But those of you imagining photos of Air Force generals poking dead aliens with sticks might be disappointed. Area 51 was home to some of the most secret plane prototypes of the Cold War. The U-2 craft, for example, was designed to covertly snap aerial reconnaissance photos with powerful cameras. Its unheard-of altitude is why many mistook it for a UFO.

Miffed that Area 51 held boring secrets? Maybe you'll have better luck at the border region between China and India. Locals on both sides have reported bright lights in the sky and robot-like figures. Given that the Indian Army reported 99 sightings of Chinese military drones over a mere eight months last year, the answer probably brings us no closer to ET.



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83%



HAPPY

9%



DISGUSTED

6%



FEARFUL

2%



ANGRY



FROM 007 TO 7,000

Clad a waistcoat, he wasted over 10,000 people!



Perhaps the world's best-known pistol, the Walther PPK was wielded by... We'll give you a clue — this Briton knew how to wear a waistcoat the right way. But this gun has a darker real-life past: **it was the weapon of choice for possibly the most prolific executioner in history, Vasili Blokhin**, and he was a Major-General in the Soviet Army, hand-picked by Josef Stalin

himself. Between 1926 and 1955, he murdered over 10,000 people. Blokhin's most infamous act was the 1940 Katyn massacre, when he personally shot up to 7,000 Polish officers in the head. Clad in a butcher's apron and working in a soundproof room with sloped floors (so the blood could run out), his 10-hour shifts saw him dispatch on average one person every three minutes. His choice of the Walther, a German weapon, was allegedly to provide a scapegoat should the thousands of bodies ever be found — Soviet authorities could claim it was done by the Nazis.

THREE FACTS ABOUT THE TERRACOTTA ARMY



Each of China's famous Terracotta Warriors is modelled with their own unique appearance, with distinctive faces, hair and clothing. There are thought to be more than 8,000 soldiers, civil servants and horses in all. So it's like having a real, immovable army. One larger than the militaries of Haiti, Monaco, Vanuatu, Mauritius and Iceland, combined.



The weapons borne by the Warriors were constructed in such an advanced manner that many were found still razor-sharp. For example, the bronze swords were fashioned with a layer of chromium oxide 10 to 15 micrometres thick, which protected them from corrosion and has kept many impressively rust-free to this day, more than 2,000 years later.



Thought to be constructed by 700,000 craftsmen, the complex is the size of Manhattan, in New York City. Historians think that the artisans who worked on the soldiers were forced to sign their name — so that superiors could check their work. If quality was lacking, they would be reprimanded or punished, sometimes even decapitated.

Of cravats and cuffs...

Pop on a suit, tie and cufflinks, and you're sporting an awful lot of history. Emphasis on the "awful"



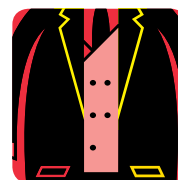
TIES

King Louis XIV kicked off the modern tie craze in 1650. He got the idea from the Croatian military scarf, root of the accessory known as the cravat. In Western circles in the 1800s, it's said that touching other man's neckwear could be grounds for duel.

Tied to today: Most police officers around the world today wear clip-on ties — so that suspects can't choke them in a fight.



Tied to today: Why do Western men rarely don hats now? Probably former US president John F. Kennedy triggered the change when he went to his presidential inauguration of 1961 hatless. Weird, and not true — there are photos showing him in a very classy silk top hat.



JACKET CUFFS

became the London home of tailors, it was a surgeon's district. Keen to remain classy even in a messy operation, doctors wore functioning "surgeon's cuffs" on their jackets, allowing them to roll up their jacket sleeves and plunge their hands and arms into bodies without becoming blood-soaked. **Tied to today:** Surgeon's cuffs are still only found on expensive, bespoke jackets.



HATS

Up until the 19th century, hat makers or "hatters" used mercury to cure the felt material of certain hats. Overexposure to toxic mercury led to uncontrollable muscle tremors (or "hatters' shakes"), slurred speech and even hallucinations in some cases.

REPLAY



SACHIN TENDULKAR
LIVING LEGEND



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HOUSTON, WE HAVE A PROBLEM



Darkness in Your Belly

Turns out the mysterious “dark matter” is part of all of us

The concept of “dark matter” in physics is of a mysterious, invisible substance that is near-impossible to detect with our current instruments. We know it's out there — 25 percent of the universe is made up of it — but not much more.

But you don't have to look into space to find it. Because “biological dark matter” is a thing too. These are genes that defy definition, and they're living inside you right now. Up to 50 percent of the cells in your gut are biological dark matter. In other words: your body is a stranger.

Nathan Wolfe, a biologist and President of the Global Viral Forecasting Initiative, gave a talk where he told the audience: “Imagine that we took a nasal swab from every single one of you. We would see that about 20 percent of the genetic information in your nose doesn't match anything that we've ever seen before — no plant, animal, fungus, virus or bacteria. Basically we have no clue what this is.” Some 40 to 50 percent of your gut is

biological dark matter. Even blood is one to two percent dark matter, Wolfe says.

The implications of such a mystery could be huge, of course. They could fundamentally change the way we think about the nature of biology, argues Wolfe, even helping us to cure cancer. Even the Joint Genome Institute of the United States Department of Energy breathlessly wrote in 2013 that biological dark matter could change everything. “Is space really the final frontier,” they asked, “or are the greatest mysteries closer to home?”



THE OVERVIEW EFFECT

Separation from Mother Earth can lead to psychosis!

We often focus on the physical effects of space travel. But there is an even more mind-blowing psychological, even spiritual, consequence. The “overview effect” occurs when a puny human astronaut sees his home planet in its entirety, as you can imagine, a pretty startling sight. And one that has a major effect on your — pardon the pun — worldview. As Frank White, who has written a book about the subject, says, “All ideas and concepts that divide us when we are on the surface begin to fade from orbit and the moon. The result is a shift in worldview, and identity.” You see how fragile the Earth is, how meaningless petty wars

are. Frankly, if you were to fire the leaders of the world up into space to enjoy that view, you could solve a lot.

In fact, long before the overview effect, there was the “break-off effect”. Sometimes, it's a feeling of exhilaration. Other times, not so much. In 1956 a Navy pilot flying at the edge of the atmosphere told a psychologist about “a frightening feeling of detachment he experienced”, along with violent wrath. Break-off appears to affect mainly lone flyers, as in the case of a high-altitude pilot in 1958. It's a troubling fact when multi-billion dollar projects can be affected by the psychological state

of crew members. A 1959 issue of the *American Journal of Psychiatry* even warned that separation from “Mother Earth” could lead to “the temptation to escape through suicide into oblivion” and “may be accompanied by an urge to destroy the space vehicle and the rest of the crew.”

Possibilities like these have led to some official guidelines. Should a crewmember suffer psychosis, the remaining crew should bind them with bungee cord and tape, and give them tranquilisers. “Explain what you are doing, and that you are using a restraint to ensure they are safe,” explains NASA's checklist helpfully.

REVITALISE



DEEPAK CHOPRA
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OCCUPATIONS

IT'S A DOG'S LIFE

If your world revolves around dogs, then India's first certified canine behaviourist Shirin Merchant could just be your go-to person for pet peeves. In conversation with Adii Dande



CANINE BEHAVIOURIST
SHIRIN MERCHANT

From petting every pup she met to helping pet parents cope with the everyday issues of their dogs, ardent dog-lover Shirin Merchant has come a long way. She explains how her profession is based on scientific research and why she absolutely loves it.

Why this profession?

My family always loved dogs, so choosing a profession where I can work with dogs and help them was a natural option for me. I met my mentor, renowned canine behaviourist John Rogerson, in 1995, when he was in India to conduct a training workshop. I was fascinated with his work. He

invited me to study under him in England, and it has been an exciting journey since then! I love my work... It gives me the opportunity to help pet parents and dogs that would otherwise be abandoned or euthanised.

What exactly does this profession involve?

The work is based on scientific research. The behaviourist works by studying the animal's behavioural patterns, the environmental factors and genetics involved.

How challenging were the initial years?

When I first started working

in 1996, most people had the notion that only men could be dog trainers; moreover, only "trainers" could train dogs. Also, "canine behaviour" was unheard of. I had to really work hard for people to accept it in India. I now have over a few hundred students across the country and I'm proud to say that 72 percent of them are women! It's been over 16 years since I first started off on this exhilarating journey, fraught with challenges. But when you are passionate about your work, it's never tedious. And working with dogs is one of the most rewarding and satisfying professions to ever be in. There have been many highlights too! The most memorable being the work we did after the Bhuj earthquake in 2001 with our search and rescue dogs, helping to find bodies buried under the rubble. Also, launching India's first award-winning dog magazine – *Woof! The Mag with a Wag!*, in 2002, was very exciting.

Does formal training help or is pure passion enough?

Just a love for dogs is not enough. Formal training can help a person understand canine behaviour better. A person who is only going by experience or love can make serious mistakes while assessing a dog or can even get bitten. Formal knowledge is imperative to avoid dogs from being misdiagnosed.

Where can one look for formal guidance?

My organisation, Canines Can Care, is the only one in India that offers comprehensive courses in canine behaviour and training. But there are options

in England. In 2013, I applied for a canine exam, the KCAI - Kennel Club Accreditation Scheme for Instructors, England, for dog trainers and behaviourists. It involves a stringent practical exam and a 12-hour oral examination. In fact, I became the first person outside of Europe to gain accreditation in Companion Dog Training and Behavioural Training, and one of nine people in the world to have achieved it!

Can you help other animals as well?

Each species is different so you cannot apply the same rule. I work only with canines.

Do canine behaviourists work with vets?

Each profession is separate and individual. The two need to work in tandem as behaviour and health are often interlinked. In cases where I suspect a health issue, I will not meet a dog until the vet has given it a clean chit of health.

5 ABSOLUTE ESSENTIALS FOR A CANINE BEHAVIOURIST

- PATIENCE
- LOVE FOR THE ANIMAL
- ABILITY TO COMMUNICATE WITH DOGS (AND HUMANS)
- COMPLETE LACK OF PRIDE AND EGO
- A SENSE OF HUMOUR

Is it difficult to switch to this profession?

There have been lawyers, CEOs, housewives, students, doctors, etc. who have given up their careers to take up dog training as a profession. When you work with something you are passionate about, it is worthwhile, isn't it?



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**PAGE 32 A DIG THROUGH HISTORY
TO UNEARTH SURPRISES**

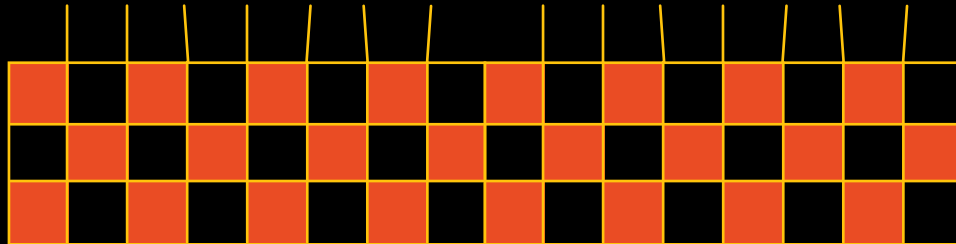
**PAGE 46 WHY DO WE FORM TRIBES
AND HOW THEY AFFECT US**

**PAGE 58 THE HATS WE WEAR AND
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**PAGE 74 THE IMMINENT
EXTINCTION OF THE
SUMATRAN ORANGUTANS**

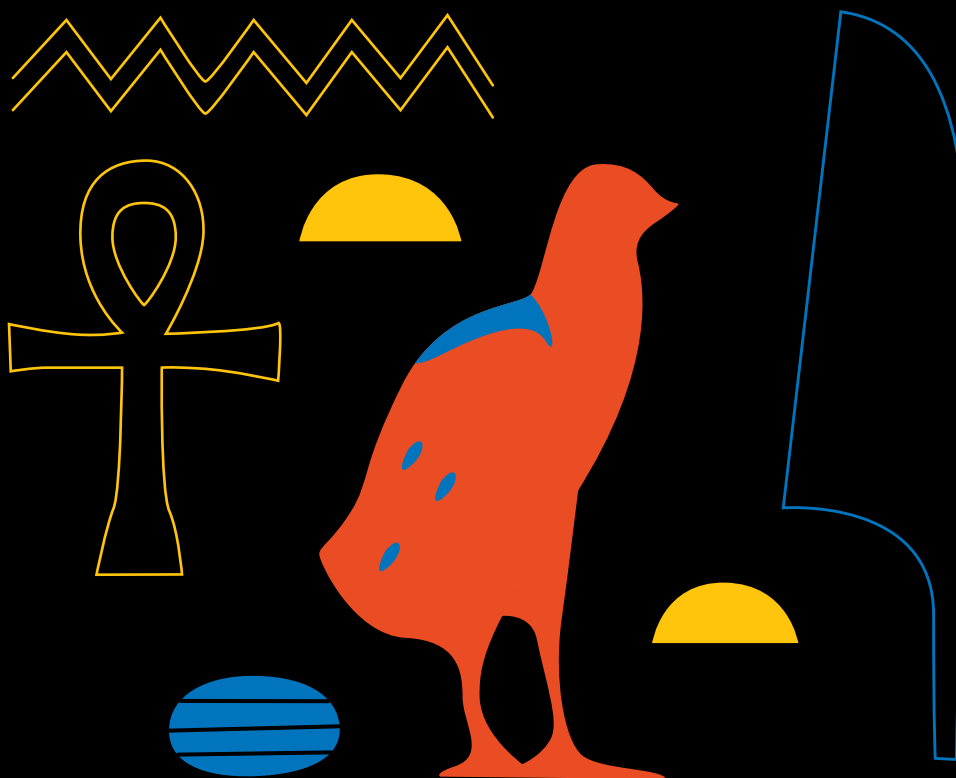
**PAGE 90 A BUMPY RIDE TO
DANGEROUS TERRAINS**





PHARAOH AND LOATHING

RETURNING TO THE TIME WHEN
RESEARCHERS FIRST UNLOCKED THE
SECRETS OF THE GREAT EGYPTIAN
PYRAMIDS, **CHRIS WRIGHT** DISCOVERS
THAT MANY OF THOSE CONFLICTS
REMAIN EVEN TODAY





It is stuffy and stifling in the low and narrow tunnel as Howard Carter, an English archaeologist, levers out stones from a sealed, underground doorway. He calls for a candle, to check if there are foul gases coming from the other side — it's been sealed off for more than 3,000 years, after all. This search has lasted almost a decade in the dry Egyptian rock!



It is 1922 and the greatest moment in modern archaeology has just occurred. Carter and Carnarvon have found the tomb of Tutankhamun, whom the world will come to know as the Boy King; the last of the pharaohs to be discovered in the Valley of the Kings, where 500 years' worth of Egyptian rulers were entombed from the 16th to the 11th century BC. It is a moment that will enrapture the world, whose

people will embrace ancient Egypt into their reading, their art, their decoration and their fashion. It will stand as the greatest archaeological find of modern times, dramatically increasing our understanding of one of history's most revered cultures. It will bring to an end the uneasy era of the tomb excavator, since it is clear that no other find like this remains to be unearthed. And it will be followed, at various stages, by the deaths of

many involved — Carnarvon within six weeks and Carter not until 1939, but with the rest of his life subsumed to the burden of cataloguing his finds. To this day, people share stories about a curse.

THE TOMB RAIDERS

Today, whenever we look back upon that era of excavating the tombs of the pharaohs, we think of Carter, though really he was the last in a long line of plunderers.

PREVIOUS AND THIS PAGE
THE ENGLISH EGYPTOLOGIST HOWARD CARTER DISCOVERED TUTANKHAMUN'S TOMB IN THE VALLEY OF THE KINGS, EGYPT IN 1922 AND IN 1923, OPENED THE KING'S STONE SARCOPHAGUS



Pyramids were out of fashion. Kings were being buried in secret rock-cut tombs in southern Egypt, and the northern royal cemeteries were curiosities — tangible reminders of a vanished, almost mythical age.”

WHEN TUTANKHAMUN WAS AROUND, HE WOULD HAVE BEEN LOOKING AT THE PYRAMIDS LIKE THE BRITISH LOOK AT THE TOWER OF LONDON: ANCIENT AND MYSTERIOUS AND WEIRD

“And of course they’re aware of that antiquity, they know,” says Collins, whose immersion in this world is so deep that it feels natural to talk about it in the present tense. “They have lists of kings, successive generations stretching back to the beginning of time, and that time is unbroken, because you can see the monuments there.” So it is no surprise that Egyptians looted from other Egyptian tombs because they were as curious about their forefathers as we are today. And through it all, through Roman civilisations, and Greek, and ancient Chinese dynasties, through Hinduism and Buddhism and Islam and Christianity, Alexandra the Great and Genghis Khan and everyone since, the Egyptians have remained incredibly, timelessly fascinating.

Over the centuries many others have stolen, excavated and salvaged — the ►

It starts, arguably, with the Egyptians themselves. “Certainly, most of the tombs in the Valley of the Kings had been plundered in antiquity in Ancient Egypt itself,” says Dr Paul Collins, who is sitting with *DCM* in a book-filled office of the Ashmolean Museum in Oxford, England. Collins is the Jaleh Hearn Curator for Ancient Near East, which makes for a hell of a business card. He’s also the co-curator of a new exhibition on the discovery of Tutankhamun.

“We know that because the Greeks and the Romans talk about visiting the tombs,” Collins says. “They were great tourist attractions to the Romans, particularly when they occupied Egypt, and the graffiti all over these tombs in Latin and Greek shows they were as intrigued by them as we are. But, even then, they were empty.”

This is the thing about Ancient Egypt: the sheer scale of its distance in time from us, and the extraordinary period that it covered. When

Tutankhamun was around, he would have been looking at the Pyramids like the British look at the Tower of London: they would have been more than a thousand years old, mysterious and weird. “Long abandoned by their priests, lying open and stripped of contents, their precious mummies vanished,” writes Joyce Tyldesley in *Egypt: How a Lost Civilisation Was Discovered*. “At the feet crouched the once-mighty Sphinx, now buried up to his noble neck in windblown sand.

► distinctions between them are not always clear — with the Napoleonic era particularly significant. It was during this time that Napoleon's troops unearthed what we now call the Rosetta Stone, which at first appeared to be building-site fill and is today perhaps the single most valued treasure in the British Museum. That's because it carries a decree written in three languages — Ancient Greek, Demotic, and Ancient Egyptian hieroglyphs — and proved to be the key to decoding hieroglyphics, the picture-based language of the ancient Egyptians.

EGYPTIANS LOOTED FROM OTHER EGYPTIAN TOMBS BECAUSE THEY WERE AS CURIOUS ABOUT THEIR FOREFATHERS AS WE ARE TODAY

Carter arrived on the scene towards the end of an era rich in characters but not so blessed with scientific method. The most extraordinary of them was surely Giovanni Battista Belzoni — or The Great Belzoni, as he was sometimes known — who is as close as we can get to the idea of a tomb-raiding, courageous Indiana Jones in Egyptian archaeology.

MOVING AND SHAKING

Belzoni's story is great. He started out as a hairdresser in Padua in northern Italy then led an itinerant existence around Europe before earning a living as a theatre strongman known as "The Patagonian Sampson", whose party piece

was to carry 12 full-grown men upon his shoulders in the shape of a pyramid. (How's that for premonition?) He conjured and played a glass harmonica. "He pops in a circus in London, in a theatre in Perth where despite his strong Italian accent he plays Macbeth, in Plymouth where he once again supports a human pyramid, and in Edinburgh where he bravely, some might say foolishly, acts alongside a live bear," writes Tyldesley.

He turned up in Egypt in 1815 to try to sell water-lifting equipment, but like an increasing number of people in this era, he was very interested in the monuments around him. Ever since Napoleon had — perhaps literally — put Egypt on the map, the wealthy had begun to add Egypt to the Grand Tour, wherein "a small but persistent trickle of Europeans in search of a frisson of adventure made their way southwards, sailing in native boats, sleeping in tents, donning native dress, and returning home to publish lengthy, inaccurate and very popular guidebooks," Tyldesley writes. "More often than not, they returned home with souvenirs." And it was through this growing love of souvenirs that Belzoni would make his name.

"They were at that moment when they were thinking big," explains Collins. "This is the imperial age, when you can move sculptures on a grand scale which would not have been possible before, and afterwards politically and logistically wasn't possible." Several things were happening at once. As well as private collectors, museums like the Ashmolean, the British Museum in London, and the Louvre in Paris, were collecting antiquities, and paying fairly good money for them. And, for





ABOVE BRITISH ARCHAEOLOGIST HOWARD CARTER EMERGES FROM THE TOMB OF THE EGYPTIAN PHARAOH TUTANKHAMUN HOLDING A BOX OF ARCHAEOLOGICAL ARTIFACTS



FAR LEFT A GROUP OF UNIFORMED GUARDS STAND AROUND THE GOLD DEATH MASK OF THE EGYPTIAN KING TUTANKHAMUN ON DISPLAY AT THE BRITISH MUSEUM IN 1972

LEFT A VIEW OF LUXOR BETWEEN THE RAMESSEUM AND THE TEMPLE OF HATSHEPSUT IN THE NILE VALLEY, EGYPT

the first time, the big things could be moved. “It’s only really in the 19th century where there is the imperial presence that gives politically enormous influence in these countries, and the sailing and steaming ships that can transport this stuff are available,” explains Collins. “That means you’ve got a combination where the Belzonis can function and become famous as a result. He was able to work the system and move enormous monuments around the world.”

And become famous he did, although he makes many modern archaeologists queasy with his methods and casual attitude towards the priceless. Consider this passage from his autobiography, in a tomb near Luxor: “After the exertion of entering... I sought a resting place, found one, and contrived to sit; but when my weight bore on the body of an Egyptian, it crushed it like a band-box. I naturally had to recourse to my hands to sustain my weight, but they found no better support; so that I sunk altogether among the broken mummies, with a crash of bones, rags and wooden cases... every step I took crushed a mummy in some part or other.”

Still, he is responsible for the provision to museums of some truly extraordinary things that might otherwise have met a worse fate. The most remarkable is also in the British Museum: a colossal head known as Younger Memnon, a statue of the 19th Dynasty King Ramesses II. This piece had attracted attention before. Napoleon’s troops had tried to take it, and had been about to dynamite the head from the shoulders — you can still see the hole they drilled in the shoulder in order to do it — before giving up on the whole idea after working out it weighed eight tonnes. Belzoni, not to

be deterred, hired 80 men to put it on to a wooden sledge and roll it a couple of miles to the Nile, a process which took 16 days. It is a monument so fabulous it inspired Percy Bysshe Shelley to write his most beloved poem, *Ozymandius*. The title of the poem being the Greek name for Ramesses.

AFTER RESTACKING, IT LOOKED AS IF SOMEONE HAS FOUND ALL THE BOUNTIFUL THINGS A PHARAOH MIGHT NEED IN THE AFTERLIFE AND CHUCKED THEM IN A HEAP

Fortunately, by the time Carter came along, he had a more fastidious mentor to learn from. “Carter had brief training by the great Egyptologist Flinders Petrie, and it was Petrie who revolutionised the field of Egyptology,” says Collins. “He was the one who brought a real scientific approach. Before him and after him, people were simply just digging, and not making the detailed, accurate records that Petrie said were necessary, not just to understand the material as it was discovered, but to reconstruct it afterwards and think about its broader context. Something of that may well have rubbed off on Carter.” To scholars of the period, Petrie, not Carter, is the one they tend to revere. “He did more than anyone else to turn Egyptology from a glorified form of treasure hunting into a reputable science,” writes Tyldesley. ►

► DIGGING FOR GOLD

Carter, in any event, seems in hindsight to have been the right man at the right time. Collins says: "Carter was by nature an incredibly meticulous and detailed man, and it was a fortuitous combination of his own approach to life — on the whole he was a very difficult person to work with — and this emerging approach to archaeology as a science."

FLINDERS PETRIE TRANSFORMED THE FIELD OF EGYPTOLOGY FROM A GLORIFIED TREASURE HUNT INTO A REPUTABLE SCIENCE

Carter was active for many years in Egypt before he ever got near the Valley of Kings. An amateur, a wealthy American retired lawyer called Theodore Davis, held the concession for the area within which Tutankhamun would eventually be found. Davis actually came within about two metres of finding the steps before eventually giving up and coming out with the famously wrong proclamation: "I fear the Valley of the Tombs is now exhausted."

Carter had actually worked for Davis early on, in 1902, uncovering the missing tomb of the 18th Dynasty pharaoh Tuthmosis IV the following year. His diaries from this time give us a sense of the day-to-day miseries of what sounds like such a glamorous profession. To get to one tomb, unromantically now called KV20, it took two entire seasons of work to clear the corridors of rubble, mud and

stones that had been washed into the tomb. He wrote:

"The air had become so bad, and the heat so great, that the candles carried by the workmen melted, and would not give enough light to enable them to continue their work; [so] we were compelled to install electric lights, in the form of hand wires... As soon as we got down about 50 metres, the air became so foul that the men could not work. In addition to this, the bats of centuries had built innumerable nests on the ceilings of the corridors and chambers, and their excrement had become so dry that the least stir of the air filled the corridors with a fluffy black stuff, which choked the noses and mouths of the men, rendering it most difficult for them to breathe."

Carter was then sent working in the country's north, where he was hounded out of employment after taking the side of Egyptian guards who had got into a brawl with some drunken Frenchmen. Carter, a proud man, was ordered to apologise to the French and refused to do so. His consequent resignation led him to three difficult years of being an artist and part-time dealer before his path crossed with that of Lord Carnarvon, a rich aristocrat who had married into the wealthy Rothschild family. The Lord had become interested in Egypt after injuring himself so badly in a speeding car that he needed dry air to help him fight off chest infections. With Carnarvon providing funds and Carter the expertise, they spent several years making modest but useful finds in the Theban necropolis until World War 1 got in the way.

Davis, meanwhile, had been plundering his way through the Valley of Kings looking for the tomb of Tutankhamun. To this day, archaeologists

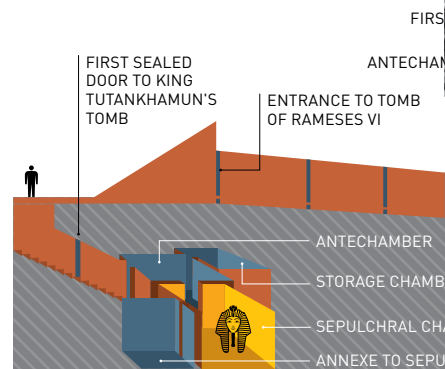
and scholars are grateful that he never found it. He had no interest in documenting what he found, and certainly not a scientist's rigour in preservation.

There are three reasons that Tutankhamun remained elusive for so long. One is the fact that he was an utterly insignificant king, in the context of Egypt's 3,000 years of dynasties. This seems remarkable when we consider how venerated he is in our world today. Tutankhamun, who was part of the 18th Dynasty, is thought to have reigned for just nine years before dying young, perhaps at 18 years old. As Jon Manchip White puts it: "The pharaoh who in life was one of the least esteemed of Egypt's Pharaohs has become in death the most renowned." Consequently, one had to be something of a scholar to know that he had ever existed, and hence to look for him: several tombs over the years have featured lists of kings, which one can now see in the Louvre, British Museum and in Egypt itself, and in most cases they miss Tutankhamun out completely.

The second reason is because of where the tomb turned out to be. It was right underneath another tomb: that of Ramesses VI. The builders who dug that tomb poured all of their rubble on top of what would later turn out to be the entrance to Tutankhamun's. They built huts on top of it too, and much later, an access road for tourists visiting the Valley. The reason Davis stopped where he did was because it was feared that excavations there would disrupt tourism flows. Also, Tutankhamun, having died suddenly, seems to have been buried suddenly too, in a tomb much smaller than that of most royals, which made it inconspicuous to tomb raiders through the ages. And the third reason ►

AN AERIAL VIEW OF HOWARD CARTER'S ARCHAEOLOGICAL EXCAVATIONS OF THE TOMBS OF THE PHARAOHS RAMESSES VI AND TUTANKHAMUN (BETTER KNOWN AS KING TUT), VALLEY OF THE KINGS, THEBES, EGYPT, 1922

HIDDEN TOMB



THE CURSE



The death of Lord Carnarvon shortly after the opening of the burial tomb was the start of an enduring story about a curse. In the months and years afterwards, a number of people connected to the tomb in one way or another died too. Examples included George Jay Gould, who visited the tomb and died shortly afterwards of fever; Archibald Douglas-Reid, a radiologist who X-rayed Tutankhamun's mummy and died in January 1924 from an unknown illness; and Arthur Mace, one of Carter's team who helped with conservation of items in the tomb, who died of arsenic poisoning in 1928. Then various people more peripherally linked to the tomb or its finders found themselves connected to the curse: Carnarvon's half-brother who died in 1923, also from blood poisoning; another half-brother, who died in 1929 from malarial pneumonia; Carter's personal secretary Richard Bethell, who was found smothered in his bed in 1929; and political figures of the time, such as Prince Ali Kamel Fahmy Bey of Egypt, who was shot by his wife in 1923, and Lee Stack, the Governor-General of Sudan, who was assassinated in Cairo in 1924.

Any scholarly examination of the facts makes a curse seem unlikely. In 1934 Herbert Winlock, an American Egyptologist, set out to track down the 26 people who had been present at the tomb opening, and found that only six of them had died within a decade. Of those who had first crawled into the burial chamber, yes, Carnarvon had died — but he had been ill for years, and had in fact ended up in Egypt specifically because of his illness — whereas Carter lived another 16 years and Lady Evelyn, Carnarvon's daughter, lived until 1980.

Continued on page 41 ►►



► was that Davis thought he had already found him. In his excavations, he, or his hired archaeologist, Edward Ayrton, came across several things linked to the boy king: a cup bearing his name; then a small pit containing the remains of his embalming materials. In 1909 they found a small, undecorated chamber with a

TUTANKHAMUN WAS AN UTTERLY INSIGNIFICANT KING IN THE CONTEXT OF EGYPT'S 3000 YEARS OF DYNASTY



couple of minor things linked to Tutankhamun within. Davis concluded this pit was the lost tomb of Tutankhamun. And so he gave up. In 1914 his concession expired. Carnarvon took it up.

A SLOW JOURNEY

It took them years to find Tutankhamun. First, the Great War interrupted all digging, so it wasn't until 1917

that they could really start. Then, progress was hopelessly slow. By 1922, with Carnarvon having run out of money, "he said to Carter, 'That's it,'" says Collins. "We've found absolutely nothing. One mummified cat from 1914 to 1922." They had shifted thousands of tonnes of rubble.

But, poring over a map of the Valley of Kings, they realised that there was one square of it left that they had not explored. Carter offered to pay the costs of one final season himself. "And Carnarvon, a great gambler, said: 'let's go for it,'" says Collins. "And within three days of going back, they had found it."

What they found initially was a step, which became a flight of 16 steps leading down to a blocked doorway. "Demonstrating admirable self-control," writes Tyldesley, "Carter re-covered the stairwell to hide the tomb from thieves, swore his workmen to secrecy, and then crossed the river to the Luxor telegraph office where he sent a coded message to Lord Carnarvon in England." The message said: "At last have made wonderful discovery in Valley. A magnificent tomb with seals intact. Recovered same for your arrival. Congratulations. Carter."

It took Carnarvon and his daughter three weeks to get out there, and one can only imagine what Carter must have been going through. Re-clearing the stairway, they found good and bad news. The good: Tutankhamun's name was on the tomb. The bad: the tomb had already been opened and resealed, at least twice, in antiquity.

Beyond the door was a corridor, which had to be cleared of rubble and limestone chips. On November 26, Carter and Carnarvon found themselves in front of

a sealed doorway leading to the antechamber. And this is where we started our story, with Carter and a candle, trying to work out why there was a glinting shine coming back at him — and realising that it was coming from gold.

Today, we can see photographs taken by the talented Harry Burton, once they unblocked the doorway fully. It looks like a spare room stuffed with clutter: a jumble sale, as Collins says. Maybe because early robberies took place and guards restacked things carelessly, but it looks as if someone has found all the bounteous things a Pharaoh might need in the afterlife and chucked them in a heap. There were three large, animal-shaped beds; the wheels of several dismantled chariots, boxes, vases, food, drink and furniture.

Carter was not the sort of man to barge in without documenting precisely what he had found and taking measures to protect it. Carter says in his autobiography: "Excitement had gripped us hitherto, and given us no pause for thought, but now for the first time we began to realise what a prodigious task we had in front of us, and what a responsibility it entailed."

He set about assembling something of an A-Team of Egyptological specialists — Burton the photographer plus a conservation expert, an engineer, an architect and a chemist. They used nearby empty tombs to provide them space to work. The tomb of Seti II became a workshop and laboratory. The tomb of Queen Tiy became Burton's darkroom. Ramesses XI's resting place became the lunch canteen. With the team assembled, it took seven weeks to empty the antechamber, with each object numbered, photographed, planned, recorded and drawn.

Then they were given more treatment in the tomb-cum-lab, packaged in wadding and bandages, and sent to Cairo.

A CURSED TREASURE?

By February 1923, it was time to open the next sealed entrance: to the burial tomb. With similar tension and wobble-candled expectation as when he chipped into the door of the antechamber,





ABOVE THE GOLDEN FUNERARY MASK OF TUTANKHAMUN, INLAID WITH LAPIS LAZULI, OBSIDIAN AND TURQUOISE. THE MASK WAS AN ESSENTIAL ITEM OF THE ROYAL BURIAL EQUIPMENT SERVING AS AN IMAGE THAT THE SOUL COULD ENTER AND OCCUPY DURING THE AFTERLIFE IF SOMETHING HAPPENED TO THE BODY

FAR LEFT AN ARTWORK SHOWING THE VARIOUS PARTS OF THE SARCOPHAGUS OF THE EGYPTIAN PHAROAH

Carter did the same with this new doorway. But the results, if anything, were even better. “An astonishing sight... for there, within a yard of the doorway, stretching as far as one could see and blocking the entrance to the chamber, stood what to all appearance was a solid wall of gold.”

It was a huge, floorless gilt shrine, filling the burial chamber. Upon investigation, it turned out to be four shrines, one inside another, with a sarcophagus within. What followed would end the careers and lives of both of them, albeit at a different pace.

First, publicity about the finds led to a huge swarm of visitors, both tourists and journalists; the latter group were deeply antagonised by an exclusive deal that Carnarvon had signed with *The Times* newspaper, making them more belligerent and, in many cases, less accurate. Carter would write: “The tomb drew like a magnet. From a very early hour in the morning the pilgrimage began. Visitors arrived on donkeys, in sand-carts, and in two-horse cabs, and proceeded to make themselves at home in The Valley for the day.” Not long after the opening of the burial tomb, the decision was made for everyone to take a 10-day break. The tomb was re-buried for security, and everyone took some time away to recharge.

Carnarvon and his daughter went south to stay in Aswan, and while there, he was bitten on the cheek by a mosquito. Back in Luxor, he accidentally sliced the scab off the bite while shaving. Then he started to feel unwell, and headed to a Cairo hotel, the Continental-Savoy, to get well. But he did not. He got blood poisoning, then pneumonia, and in the early hours of April 5, he died. They say that at the ▶

THE CURSE

▶ Continued from page 39

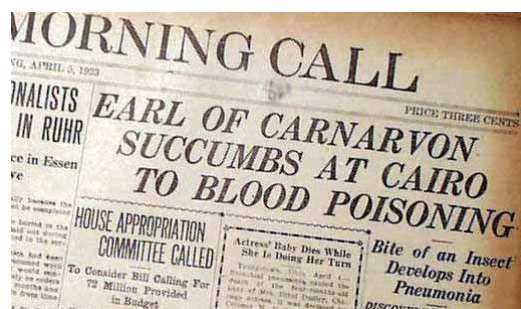
Part of the problem was misinformation. A number of newspapers, starved of information by the *Times* deal, had drummed up tales of ancient curses, with several accounts stating that there was a curse carved over the entrance.

The most common telling of the carving goes: “Death shall come on swift wings to him who toucheth the tomb of Pharaoh.” It wasn’t true. That carving does not exist. But, such was the age, it felt like it could be true. After all, everything else about the story was fantastic, so why not this? As Carnarvon’s sister Winifred Burghclere later wrote about her brother: “A story that opens like *Aladdin’s Cave* and ends like a Greek myth of Nemesis cannot fail to capture the imagination of all men and women who, in this workaday existence, can still be moved by tales of high endeavour and unrelenting doom.”

It was all, as Tyldesley writes, “a drama on an epic scale”, and it also came at a time when people were doubting religious truths. “Western Europe, in the aftermath of the First World War and the devastating flu epidemic that followed it, had lost the rock-solid certainty of unquestioning Christian faith,” she says.

Into this willing audience appeared the famous author Sir Arthur Conan Doyle, who somewhat unhelpfully suggested that Carnarvon had been killed by what he called an Elemental, created by Ancient Egyptians. This was all taken up with some sincerity by the world’s press. At the Ashmolean you can see the front page of the *Sunday Times* (the Australian version) from May 20, 1923, with a headline: “The Curse of Osiris”, with the sub-heads: “Superstitious Legend Round Lord Carnarvon’s Death”, “Marie Correlli’s Poison Theory” and “Conan Doyle Puts Suspicion on Tut-an-akh-Amen”.

Collins describes the curse story as the product of “a perfect storm. There’s the press clamouring for an angle; the wealthy aristocrat who has everything going for him, who has founded the greatest discovery in the world and then dies under mysterious circumstances. It’s at a moment when people are going to séances to try to speak to the dead. And then you’ve got this mysterious world of Egypt, of extraordinary gods and goddesses and journeys to the underworld. Out of all that emerges the idea of the curse.”





VARIOUS ANTIQUITIES FROM THE TOMB OF THE PHARAOH TUTANKHAMUN, INCLUDING (CLOCKWISE FROM ABOVE) A GILT WOOD STATUETTE OF THE KING ON A BOAT WITH A HARPOON; CLOISONNE NAME PENDANT; GOLD FINGER STALLS; A MIRROR CASE IN THE FORM OF AN ANKH, THE SIGN OF LIFE, MADE OF GILT WOOD INLAID WITH GLASS-PASTE; THE HEAD OF A FUNERARY COUCH IN THE FORM OF A SACRED COW; AN ALABASTER CANOPIC SHRINE; A FOLDING HEADREST IN PAINTED IVORY DECORATED WITH THE HEAD OF THE PROTECTIVE SPIRIT BES; THE KING'S FLY-WHISK



BELOW THE SPECTACULAR FUNERARY MASK REPRESENTS AN IDEALISED PORTRAIT OF THE KING





► moment of death, the lights went out all over the city. This is where the idea of a curse first started.

This was disastrous, since Carter was pretty much the last person who should have been given the role of taking the project ahead. Not long after the coffin was taken from the innermost shrine in January 1924, confirming at last that they had discovered an intact royal body, Carter got into an argument so severe with the Egyptian government that they closed the tomb, and work stopped for a year.

While the discovery would be the greatest moment of Carter's life, it would also end his career, in the sense that there would never be time to do anything else again. "In many ways it may well have been what killed him," says Collins. "He was a very difficult man to work with, and that's why he never managed to publish his account in a scientific manner. He died of an illness, worn out by the effort of trying to do the job without assistance, because nobody else wanted to work with him to do it, or vice versa." Still, there was one more great delight to come: getting to the mummy within the sarcophagus.

THE GREAT REVEAL

Tutankhamun had been buried in three coffins. The outermost one was wooden, coated in plaster, and covered in gold, decorated with semi-precious stone. The second, linen-shrouded, was garlanded gold as well. The third, within, was made of solid gold. In October 1925 its lid was lifted.

"At such moments the emotions evade verbal expression, complex and stirring as they are," wrote Carter. "Three thousand years and more had elapsed since men's eyes had gazed into that golden coffin." On top of the mummy was a gold mask.

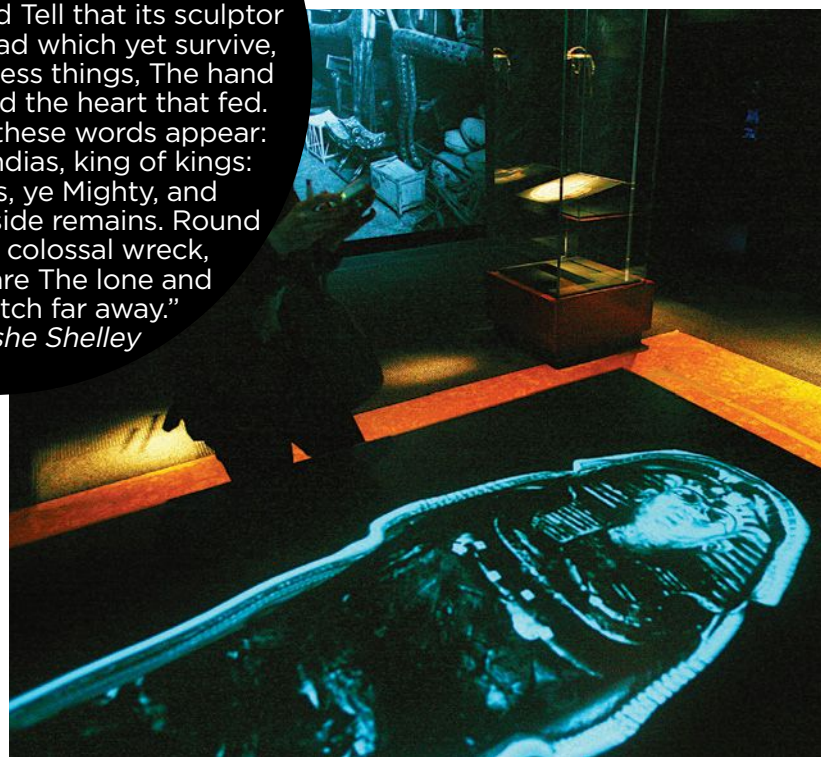


OZYMANDIAS

I met a traveller from an antique land who said: "Two vast and trunkless legs of stone stand in the desert. Near them, on the sand, half sunk, a shattered visage lies, whose frown and wrinkled lip, and sneer of cold command Tell that its sculptor well those passions read which yet survive, stamped on these lifeless things, The hand that mocked them and the heart that fed. And on the pedestal these words appear: 'My name is Ozymandias, king of kings: Look on my works, ye Mighty, and despair!' Nothing beside remains. Round the decay of that colossal wreck, boundless and bare The lone and level sands stretch far away."
- Percy Bysshe Shelley

ABOVE IN 2007, EGYPTIAN ANTIQUITIES EXPERTS MOVED KING TUTANKHAMUN'S MUMMY FROM ITS ORNATE SARCOPHAGUS IN THE TOMB WHERE IT WAS DISCOVERED, TO A NEARBY CLIMATE-CONTROLLED CASE FOR BETTER PRESERVATION

RIGHT THE DISCOVERY OF TUTANKHAMUN'S TOMB IN 1922 CREATED A WORLDWIDE APPETITE FOR EGYPTIAN ANTIQUITIES, WITH MUSEUMS AROUND THE WORLD NOW DISPLAYING THEIR TREASURES





Today, this burial mask is the iconic symbol of Tutankhamun, and indeed all of Egyptology, second only to the Pyramids and Sphinx as a representation of the extraordinary capacity and ability of this ancient people. You can see it in the National Museum in Cairo, if you can ever cut the crowds around it, and seeing it is something you never forget. The sheer artistry of it, the smoothness of the golden cheek, is such that it seems wholly inconceivable to have been possible three millennia ago.

In November 1925 came an autopsy, leading to some early conjecture on his cause of death, although modern times and techniques have brought many theories, one common theory being that he was killed in a chariot accident.

Strangely, our understanding of Tutankhamun has a lot to do with the precise time he was found. Because, what was happening in Egypt, and what was happening everywhere else. Egypt had just become independent from Britain, and had a nationalist government which maintained control over anything that was excavated from then on. Had the tomb been discovered any earlier, whatever was in it would likely have been distributed all over the world, in museums and private collections.

Then there's what the world was like in post-war 1920s. It is fascinating to look at the memorabilia that emerged from Tutankhamun's discovery. There are albums, for example *Old King Tut was a Wise Old Nut*, as well as biscuits, ashtrays, cups, King Tut lemons and Egyptian-styled carpets, curtains, wall hangings, hairstyles, fashions, everything. The West simply absorbed Tutankhamun and the Ancient Egyptians. "It's that moment when you've got a lot more freedom emerging,

in America in particular. Women now have the vote and there are all sorts of social upheavals," says Collins. "There's the old guard saying that the world will come to an end, and the new guard looking for a brave new world where the aristocracy will no longer have complete control, and democracy is emerging.

At the same time a world of technology is appearing that enables this newfound democratic world to have a voice, through Hollywood, through newspapers, through the telephone. That means the excitement of Tutankhamun can be open to everybody."

NAPOLEON'S TROOPS UNEARTHED THE ROSETTA STONE, WHICH APPEARED TO BE A BUILDING SITE, AND IS TODAY A VALUED TREASURE IN THE BRITISH MUSEUM

Today, you can go and see the treasures from that tomb in a stuffed and dated museum in Cairo. Soon, modern political dramas notwithstanding, they will be in a new state-of-the-art museum near the Pyramids. Meanwhile in the Valley of the Kings, they have built a whole new replica of the tomb not far from the real one.

The hope is that the false one will discourage people from going to the real one, which may soon be closed. But, for the moment at least, Tutankhamun's body is still there, in a glass-covered box, the only one of the Pharaohs to lie in his original tomb. ●

SHOULD WE EXCAVATE?



By the early 20th century, the antiquity laws were finally being tightened to prevent some of the mercenary archaeology-cum-looting of previous years. "Now everything officially belonged to Egypt, but excavators might, in acknowledgement of their work, receive a part of their finds at the discretion of the authorities," writes Egyptologist Joyce Tyldesley.

This, at least, kept Egypt's treasures in the country, but at that stage it was not in much of a position to look after them. Finds at the time were displayed in the Bulaq Museum in Cairo, which was hopelessly overcrowded already. Petrie had discovered a unique wooden sarcophagus from a Graeco-Roman cemetery and given it to the museum, which, for lack of room, had left it outside, where it fell apart in the hostile conditions. "The museum," says Tyldesley, "was so over-full that it was selling unwanted antiquities to tourists in the museum shop."

"The obvious solution — leaving Egypt unexcavated, her finds naturally preserved under her sand — was no longer an option," says Tyldesley, because of the thriving black market in antiquities that now existed, and the inability to afford guards at every site.

So that became the rationale for excavation and for taking ancient treasures out of Egypt. But what about the bodies? These were, after all, real people, albeit unfathomably old. Even in Carter's time, there was some unease about this. "There was a growing unease over the archaeologist's automatic assumption that the dead had no rights," writes Tyldesley. "Lord Carnarvon had deliberately sought out Tutankhamun; he had been preparing to reveal him to the world. But surely it was fundamentally wrong to desecrate a grave, no matter how ancient that grave might be?"

Today, Collins says: "We don't do that now, of course, because we've got the technology not to do it. The sorts of questions we're asking of the mummies are very different from those from the 18th and 19th century when they were being unwrapped. Now we can do it with CT scanning to such a level of detail there's no requirement to invade the body itself."

But he notes the contradictions in our attitudes to treatment of dead bodies. "There's a sense in people's minds that there is a cutoff — in terms of their distance in time from us," he says.



WODAABE MEN DECORATED
FOR THEIR GEREWOL
FESTIVAL. THIS TRIBE LIVES IN
SMALL NOMADIC GROUPS ON
THE BORDERS OF CHAD AND
NIGER IN CENTRAL AFRICA



THE NEW TRIBALISM

FROM THE PEOPLE OF ISOLATED ISLANDS TO NEW YORK TOUGHS, TRIBALISM SEEMS AS STRONG AS EVER. WHY DO WE KEEP FORMING TRIBES? AND WILL OUR MODERN DAY CONNECTEDNESS RENDER TRIBES REDUNDANT? **CHRIS WRIGHT** BRAVES THE HOSTILE EXTREMES OF BULGARIA WITH A MODERN DAY TRIBE OF TRAVELLING FOOTY FANS TO GET TO THE ROOT OF THE MATTER

In May, 2008, a series of photographs appeared on the front pages around the world. Taken from a plane, it showed members of a tribe in a forest clearing, aiming makeshift wooden weapons at the sky as if to scare off the aircraft. This, we learned, was an uncontacted tribe near the Peru-Brazil border — people who had never had any interaction with the world!

It soon became clear that the photos had been planned and distributed by a man called José Carlos Meirelles, an expert on indigenous tribes employed by FUNAI, Brazil's National Indian Foundation, which is

tasked with protecting the rights of people such as these. Meirelles had planned the pictures in order to demon-

strate to a cynical world that there are still tribes living, and thriving, in complete isolation. He did this in order to stop the steady encroachment into the Amazon jungle, which is gradually forcing these tribes into ever narrower pockets of land, and endangering them.

BEST LEFT ALONE

It seems strange, in our modern and connected world, to think of tribes like these, unaware of the existence of the rest of us, or of anything at all

PHOTOS GLEISON MIRANDA/FUNAI/SURVIVAL (WWW.UNCONTACTEDTRIBES.ORG/BRAZILPHOTOS)



MEN PAINTED WITH RED AND BLACK VEGETABLE DYE WATCH A BRAZILIAN GOVERNMENT PLANE FLY OVERHEAD. THE PHOTOS, TAKEN IN 2008, REVEAL A THRIVING, HEALTHY COMMUNITY OF PEOPLE WITH BASKETS FULL OF MANIOC AND PAPAYA, FRESH FROM THEIR GARDENS



SENTINELESE

Don't mess with the Sentinelese in the Bay of Bengal, India. With their dark skin and short stature, these warriors are of African descent and are known for their extremely hostile attitudes. Even the most conciliatory visitors bearing gifts of coconuts were met with a "hello"



to do with the outside world. But Piers Gibbon, in his book *Tribes: Endangered Peoples of the World*, says that in the 21st century, at least 150 million people belong to tribes, and that more than 100 indigenous tribes are thought to live in complete isolation from other people.

Indeed, there may well be more than that. FUNAI in Brazil recognises at least 77 uncontacted tribes either within Brazil, or in the countries like Peru and Colombia on its northwestern borders. And West Papua, the Indonesian province formerly known as Irian Jaya, which takes up half of the island otherwise occupied by Papua New Guinea, still has around 44 uncontacted groups.

IT NOW SEEMS THAT WE IN THE DEVELOPED WORLD HAVE BEEN FASCINATED BY TRIBES FOR YEARS, EVEN PERHAPS YEARN FOR SOME OF THEIR VALUE SYSTEMS

Indeed, they must remain uncontacted. FUNAI, or its predecessor the Indian Protection Service, used to make it a policy to contact isolated tribes in order to open up the Amazon basin. They even employed specialist explorers, a dangerous profession if ever there was one, for the job.

But the results were usually disastrous. "Contact with outsiders resulted in the deaths of thousands upon thousands of tribespeople ►

► throughout the region, who had no immunity to Western infectious diseases like flu, measles and the common cold,” writes Gibbon.

“Peoples such as the Matis of Brazil, who were first contacted in 1978, suffered from epidemics and many died; in the 1980s it was reported that there were not enough healthy Matis to bury the tribe’s dead.” Earlier contact was worse. It is thought that many tribes we today would consider uncontacted, are descendents of people who fled during the rubber boom in the Amazon from the late 19th century to about 1912 — during which indigenous people were massacred or forced into slavery.

“Around 90 per cent of the indigenous population are thought to have died, and survivors fled deeper into the forest to escape the violence,” says Gibbon. “It is easy to understand why the people descended from these refugees might choose to reject contact with the outside world.” For more than 20 years now, FUNAI’s mandate has changed completely: locate tribes but leave them alone, protecting their land from encroachment.

The Brazilian authorities are not the only ones to reach this conclusion. One of the most remarkable group of people on Earth must be the Sentinelese, who live on North Sentinel Island within the Andaman Islands in the Bay of Bengal, India. It is commonly said that this tribe has descended from a population that has lived on the island for 60,000 years, although what we know about them today is limited by the fact that contact is no longer permitted with them.

The Census of India records them having an official population of 39, based on the 2001 survey, yet that

was conducted by researchers peering from a boat positioned offshore. More likely is that there are in fact several hundred of them.

They have tended to act with hostility towards any attempted visitor — and when several researchers were killed in other islands in the Andamans while attempting to make contact in the 1990s, the decision was made to leave them alone forever.

They are not altogether isolated from technology: they’re known to have made tools from metal, after ships were wrecked on nearby reefs. Yet even so, they are considered to be about as remote as it is possible to be on this planet. “They are commonly described as ‘Stone Age’, a term that has angered many campaigners who believe it denigrates the achievements of tribal people,” says Gibbon. “And the tribe is often presented as an example of man living in a natural, pristine state.”

TRIBAL YEARNINGS

So what exactly makes a tribe? It’s an inexact term, and some think, an offensive, colonial one. Generally, people belong to a tribe if they share the same customs and language and are descended from the same ancestors. Or, and perhaps this is the crucial point, they think of themselves as a tribe, as a collective and defined group of people acting together.

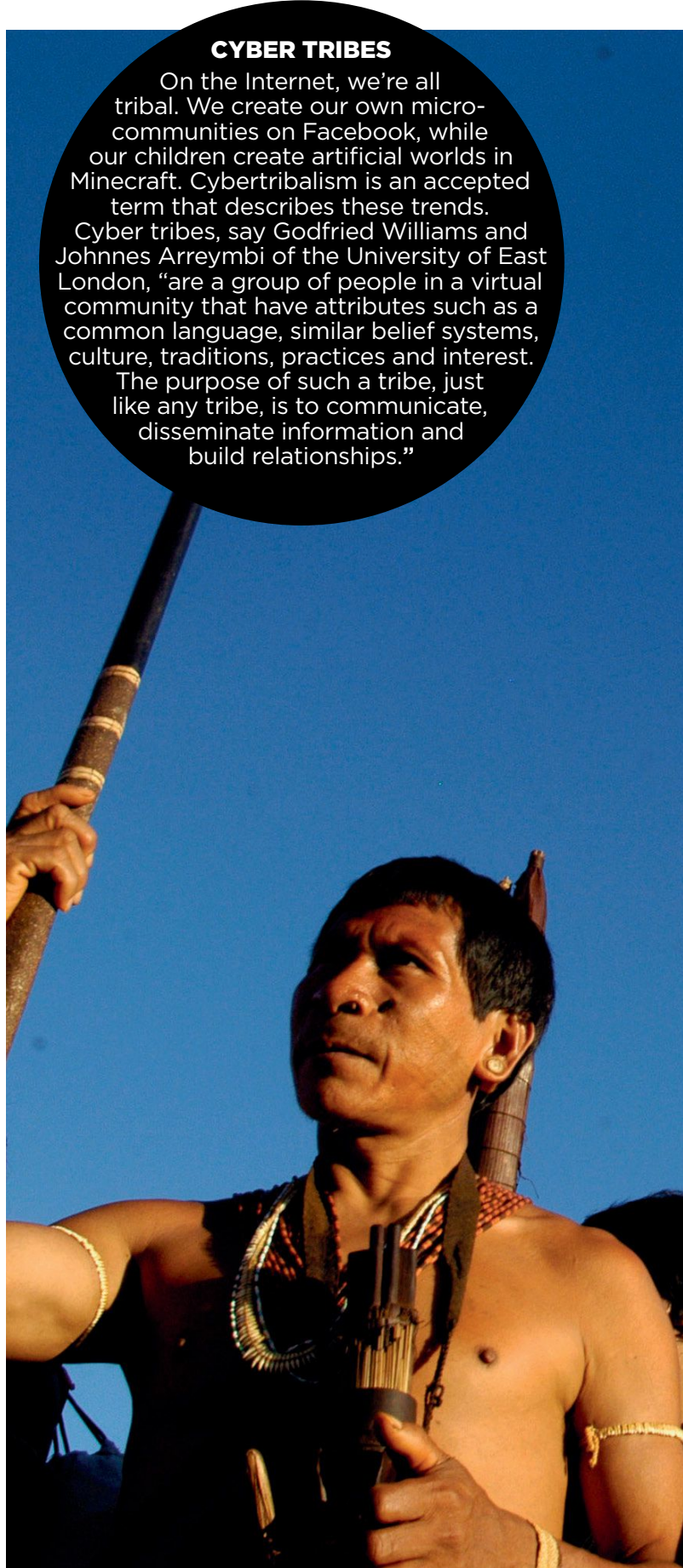
It is hard to be precise about it. As anthropologists have noted, the Amba tribe of Uganda speak two different languages, but consider themselves one tribe. The Dorobo of Kenya hunt and live with the more famous Masai and Nandi, yet consider themselves a completely separate individual tribe. While no definition will quite be right for everyone, it is the sense

CYBER TRIBES

On the Internet, we’re all tribal. We create our own micro-communities on Facebook, while our children create artificial worlds in Minecraft. Cybertribalism is an accepted term that describes these trends.

Cyber tribes, say Godfried Williams and Johnnes Arreymbi of the University of East London, “are a group of people in a virtual community that have attributes such as a common language, similar belief systems, culture, traditions, practices and interest.

The purpose of such a tribe, just like any tribe, is to communicate, disseminate information and build relationships.”





MATIS

The piercings of this Brazilian tribe will command the respect of even the most anarchistic punks. Throughout a lifetime, a Matis will gain piercings on the ears, nose, nostrils, and below or above the lips.

The piercings increase in number, and ornaments become larger (earrings up to five centimetres in diameter) over time, signifying seniority in the tribe

of separateness from other groups and ways of life that seems to make a tribe.

Lately though, it seems that the developed world has been fascinated by tribes — and even perhaps yearn for some of their value systems. “The sad irony is that even as we destroy these tribal cultures, now is the time when we need them more than ever,” writes Bruce Parry, the anthropologist and journalist who knows more than most about tribal behaviour, having lived for periods of months at a time with 15 different tribes when researching a TV series.

“Rather than wrecking the planet, we could be listening and learning from their long-standing knowledge about how to lead a more sustainable life and how to protect the environment. They have lots to teach us,” he says.

ABOUT 90 PER CENT OF THE INDIGENOUS POPULATION OF THE AMAZON DIED, AND SURVIVORS FLED INTO THE FOREST TO ESCAPE VIOLENCE

Others point towards the recent wistfulness in parenting manuals towards tribal upbringings, which are considered to be more child-centred, with less separation between parents and child, than they see as being the case in the West. If you’ve ever heard the proverb: “It takes a village to raise a child,” that too comes from a tribe, the Yoruba from Nigeria.

In reality though, there’s no sense in romanticising ►

MEMBERS OF THE MATIS TRIBE STAND WITH THEIR BLOW-DART WEAPONS DURING THE CLOSING CEREMONY OF THE XII ANNUAL INDIGENOUS GAMES IN PORTO SEGURO, BAHIA STATE, BRAZIL. ABOUT 1,100 MEMBERS OF 42 TRIBES PARTICIPATE IN THE GAMES

► the realities of tribal life. "All too often people from the 'developed' world put tribal cultures on a pedestal, seeing them through rose-tinted spectacles as pristine with perfect environmental credentials and a great sense of community," says Parry.

"This may contain some truth in comparison to our own culture, but to sweepingly brand such societies as idyllic is deeply patronising." For his part, Parry has witnessed the extreme end of tribalism too — cannibalism with the Kombai in West Africa; female circumcision with the Daasanach in Ethiopia; warfare with Suri and Nyangatom in Ethiopia; inebriation with the Sanema in Venezuela; and the violent abuse of women with the Hamar in Ethiopia. Sure, tribal people may indeed have lessons for us, but these practices are likely not among them.

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Perhaps our modern fascination with tribes has to do, for some least, with a loss of our sense of community. It is now completely normal, whether you're in London, Singapore, Taipei, New York or New Delhi, to spend years in an apartment without ever knowing your neighbours'

names. Sometimes, you won't even know who they are.

While we are connected to everybody through technology, we're also increasingly individual, and selfish too. It's almost as if there's a feeling, planned or otherwise, that we somehow don't help each other now in ways that we once did. We put our elderly into nursing homes instead of helping them ourselves, and look at an iPhone instead of passing the time of day in a conversation. In short, we don't want to be dependent on anybody — and don't want anyone else to depend on us.

Perhaps that makes us look with envy upon what we perceive as the more simple lives of tribal people, uncluttered by tax returns and phones that won't sync and the internal politics of whichever family to spend Christmas or Chinese New Year with. We admire their inter-dependent sense of community — because it doesn't exist anymore in our society. Or does it?

OFF WITH THE REDS

It is 3am on a late November Tuesday, when *Discovery Channel Magazine* sets off for Liverpool John Lennon Airport ("Above us only sky") to catch the official Liverpool Football Club supporters' flight to Sofia, the capital city of Bulgaria.

Liverpool FC is set to play the team PFC Ludogorets Razgrad, a minnow of European football whose home stadium, with a capacity of 6,500 seats in a forested region of northeastern Bulgaria, is so small that tonight's Champions League football game must instead be played in the country's national stadium. As we speak, about 2,000 Liverpool fans are making the trip. The mood at the gate is grizzled, but convivial. Most of the 150 people on this particular plane know

A LIVERPOOL FAN WITH FACE PAINT AT THE INTERNATIONAL CHAMPIONS CUP GAME BETWEEN LIVERPOOL FC AND AC MILAN AT THE BANK OF AMERICA STADIUM IN CHARLOTTE, NORTH CAROLINA



NATIVES OF SEVERAL TRIBES TAKE PART IN A CEREMONY TO BRING ATTENTION TO SAVING THE AMAZON FOREST (S.O.S AMAZON) IN BELEM, IN PARA, IN THE HEART OF THE BRAZILIAN AMAZON, IN 2009



LIVERPOOL FOOTBALL FANS

The mark of a true Liverpool fan is a wardrobe full of (preferably autographed) scarlet jerseys. In the company of fans, be careful not to talk about Suarez that way — they may bite. Or they're dying to be bitten, like the fan who tattooed tooth marks of the infamous footballer with the caption, "Suarez was ere"

somebody else here, by sight if not by name. Once we're on board, the air crackles with local "Scouse" accents, and an endless stream of anecdotes about past adventures following the team around Europe.

"D'ya remember when we went to Santiago de Compostela when we got Celta Vigo in the '98 Uefa Cup?" You really haven't lived until you've heard a Scouser say Santiago de Compostela.

The cost is about £500 (US\$780) per person in a place where the average weekly wage is £473.50 before tax, and that's without considering the two-fifths of working age people in Liverpool who don't have a job. But for this hardy crew, the suffering is part of the fun of it all — mini tortures to be harvested for stories to be told in pubs ahead of future games, across equally far-flung parts of Europe and the world.

DCM is sitting next to two die-hard fans, Mick and Pete, who demonstrate the curious mix of demographics involved among the most tribal of football fans. Mick is 54, a grandfather, and a father of a baby. He used to run a scaffolding business, now operates a taxi, and lives so close to the airport that today he walked to check-in from his house. Pete, about the same age, is a plasterer. These are neither the youthfully fervent (who can't afford it) or the high-flying wealthy (who are too busy working) that you might have expected. Chiefly, they are blue-collar labourers with the ability to set their own working hours, and for whom trips like these constitute a considerable outlay of their income.

Mick and Pete have seen the world by following their beloved Liverpool team from city to city. Mick has been to nine of Liverpool's 10 European finals since the 1970s,

hitchhiking to Rome for the first of them at 17. His attendance has covered the twin disasters of 1980s football, Heysel and Hillsborough. And through the prism of random cup draws, he has discovered Europe too. He's been to Auschwitz, only because of "that time we drew Lech Poznan in the European Cup". He really liked the architecture of Budapest, which he visited "because we had that first-round game against Debrecen in 2009. One-nil, it was." I will later meet someone who has never been on an aircraft — except to follow Liverpool in European football.

"I think," says Mick, "that I am more important to this club than Steven Gerrard," referring to the revered Liverpool captain. "Not just me. People like the ones on this plane." Gerrard himself, who understands the people who support him, might well agree with this. Without the lifeblood of committed fans, these clubs are not nothing exactly, but would be reduced in stature and global reach.

Having arrived in Sofia and been transferred to a hotel, attention turns somewhat inevitably to the location of the nearest Irish pub. Mick and Pete have researched this at considerable length and settled upon one that they think will be fit for the purpose. Then, hundreds of Liverpool fans converge there as one, speaking earnestly not just about the (lamentable) recent state of the team, but about recent travels, favourite moments, songs, stories and memories. The club for them is community, holiday and context. Their wives and partners can't understand it — there are a lot of stories about failed marriages — but it just has to be done. "This will sound weird," says Mick, "but I don't even like football. I'm just a Liverpool fan." ►

FOOTBALL FANS AT THE SWEDEN - FRANCE MATCH DURING THE 2012 OLYMPICS



MEET THE TRIBESMEN

OLD AND NEW TRIBES

OLD

LADAKHI

The people of Ladakh (which means land of the passes), live in starkly beautiful valleys in northern India. Ladakhi women are just as striking, clad in robes of heavy Chinese silk studded with pearls, turquoise stones, coral and amber. Women from less well-off families will wear robes made of coarse home-spun wool.

GAUCHOS

There is room to roam in the Argentinian pampas, or rolling land of grass and herbs. Today, though, few gauchos wander the prairies. Before the 19th century these skilled cattle tenders and horsemen were masters of the domain, but as time progressed commercial cattle ranchers pushed them out of existence.



NEW

LARPERS

LARP or Live Action Roleplay encompasses a whole universe of merry geeks who act out their fantasies. There are those who grimly recreate historic battles, fantasy fans who dress as wizards and orcs and quaff pints of mead, and Trekkies who pay homage to episodes of Star Trek, to name just a few. LARPING was born out of Dungeons and Dragons tabletop games in the 1970s, and has become a global obsession.

THIRD CULTURE KIDS

As it becomes ever more common for families to uproot themselves from their home country for work, Third Culture Kids become increasingly common. TCK's therefore grow up outside their traditional culture, with, for example, a "Japanese" expat growing up in Kenya, studying in Canada and eventually working in Paris.

NORMCORE

Normcore grew as a direct response to eye-catching fashion trends such as hipsterism. Put simply, it revels in unpretentious, average clothes — think vanilla, not mint chocolate chip with sprinkles. Jerry from Seinfeld is pretty much the patron saint, with his comfy jeans, plain sweatshirts and sneakers.

► I am mugged while in Bulgaria. Five young men set upon me and my friend. I am hit and kicked, but not with any conviction. They just want my bag, and after a brief consideration of what's in it, I let them have it. Other Bulgarians are with me though, apologetic and concerned. And within minutes, they have gotten my bag back, with nothing missing but, strangely, my Liverpool scarf.

It is now admittedly disconcerting to keep walking through Sofia's darker underpasses near the stadium, and surrounded by a language that I don't know. And it is soon with great relief, that I see familiar scarves and hats, familiar accents, and am enfolded back into the community of fans who occupy a sectioned-off corner of the ground. This is for now, for want of a better word, family. Even so far from home, all is familiar and embracing, and especially so as the songs start ringing out: *You'll Never Walk Alone*.

A community of people, thinking largely the same thing and talking with the same accent, looking after their own and projecting a shared love. So what is this, if not a new type of tribe?

There is a school of thought that we as humans have never moved away from tribalism, we now just express it differently. We might not live in communities the way that some indigenous people still do — but we're all still part of tribes. A football club is just one example of our desire to belong to a defined group, with a similar ideology.

French sociologist Michel Maffesoli pioneered the term neo-tribalism, or modern tribalism — the idea that human beings, even in modern society, will nevertheless gravitate to tribal norms, taking the form of social networks.

FANS OF US ROCK BAND KISS, POSE IN FRONT OF THE FAIRGROUND HALL IN ERFURT, CENTRAL-EASTERN GERMANY





KISS ARMY

Given the name, it is inevitable that people associated fans of Kiss with militants or guerrillas. But in truth, they were not that far off. Determined to get Kiss on a radio programme, the "army" penned letters threatening to blow up the radio station if they didn't start playing Kiss. In today's language, that's terrorism

In some respects our local identification has broken down. We commute ever-longer distances to work, we move around to seek new jobs or new experiences, and we are connected to the world through media and internet, which inevitably diminishes the focus on small-scale friendships and community. But neotribalism simply argues that, in the absence of those things, we seek to find the same patterns and connections in other ways.

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One obvious example of this is the idea of belonging to a gang. Many examples of this are criminal, such as the Italian Cosa Nostra ("Our Thing"), or mafia, the Chinese triads or the Japanese Yakuza — who come together not only through organised crime but for a sense of belonging to an ideology — and experiencing protection through membership of it. That sure sounds like a tribe.

Other gangs are more about a sense of identity, rather than lawlessness for the sake of it. Think of the Jets and the Sharks of *West Side Story*; or the mods and rockers of 1960s British youth. Or biker gangs such as the Hells Angels. Music can ►

TRIBAL NUMBERS

150,000,000

THE NUMBER OF PEOPLE STILL LIVING IN TRADITIONAL TRIBES, ACCORDING TO SURVIVAL INTERNATIONAL, A CHARITY DEDICATED TO PRESERVING THESE VULNERABLE INDIGENOUS PEOPLES, WHO FACE DESTRUCTION AND EVICTION FROM GOVERNMENTS, LOGGERS AND CLIMATE CHANGE

60

COUNTRIES AROUND THE WORLD WITH A SIGNIFICANT NUMBER OF TRIBAL PEOPLE

100

IT IS, OF COURSE, NOT EASY TO ESTIMATE HOW MANY UNCONTACTED TRIBES REMAIN ON THE PLANET. REBECCA SPOONER, A MEMBER OF SURVIVAL INTERNATIONAL, ESTIMATES THERE ARE ABOUT 100, MOSTLY IN AMAZONIA AND NEW GUINEA

3 YEARS

TIME IT TOOK FOR PHOTOGRAPHER JIMMY NELSON TO VISIT 44 COUNTRIES DOCUMENTING 35 TRIBES FOR HIS BOOK BEFORE THEY PASS AWAY. NELSON'S MOST MEMORABLE EXPERIENCES INCLUDE:

ACCIDENTALLY PEEING ON HIMSELF ON A PARTICULARLY COLD DAY BECAUSE HE WAS UNABLE TO REMOVE EIGHT LAYERS OF WINTER-PROOF CLOTHING. HE WAS THEN CHASED BY REINDEERS SEARCHING FOR SALT IN HIS URINE

SEARCHING THE SIBERIAN PLAINS FOR WEEKS, DRIVING A RUSSIAN TANK IN MINUS 50 DEGREES CELSIUS, LOOKING FOR A TRIBE WITH 60 PEOPLE LEFT

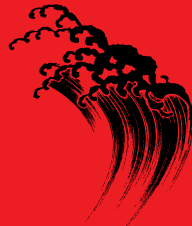
REALISING THE PACE OF CHANGE: "THE WORLD IS CHANGING RAPIDLY, ESPECIALLY THE LAST FEW YEARS, THROUGH DIGITALISATION AND THE CONNECTEDNESS OF PEOPLE. SOME TRIBES WILL HAVE FOUR WHEEL DRIVE JEEPS IN A FEW YEARS."

659 MILLION

NUMBER OF FANS MANCHESTER UNITED CLAIMS TO HAVE WORLDWIDE. IT ALSO BOASTS THAT ANY TIME ONE OF THEIR MATCHES IS ON, ONE IN TEN OF THE WORLD'S SEVEN BILLION PEOPLE WILL BE FOLLOWING IT IN SOME FORM

THIRD

IF ALL OF MANCHESTER UNITED'S FOLLOWERS LIVED TOGETHER, THEY WOULD BE THE THIRD MOST POPULOUS COUNTRY ON THE PLANET, BIGGER THAN INDONESIA, BRAZIL AND PAKISTAN COMBINED



THE YAKUZA

Full-body, intricate tattoo art, is the most iconic of the Yakuza, but is perhaps the most difficult to identify unless you're half naked in an onsen resort or public bath. A more effective way to tell if someone is Yakuza is to check if a part, all or both pinkies are missing due to yubitsume or punishment by chopping off a part of one's own digits



PHOTO GETTY IMAGES

A MEMBER OF THE JAPANESE YAKUZA TAKAHASHI-GUMI CRIME SYNDICATE WAVES A FAN TO DIRECT HIS FRIENDS AND COLLEAGUES WHO ARE CARRYING THEIR MIKOSHI, A PORTABLE SHRINE TO BRING IT TO THE FRONT OF SENSOJI SHRINE TO BE BLESSED, AS PART OF THE SECOND DAY OF THE SANJA FESTIVAL IN TOKYO



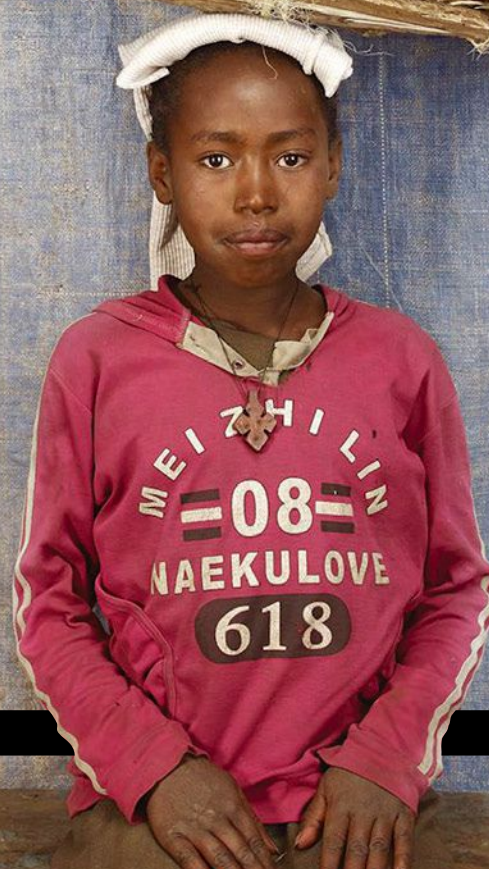
► be tribal too. People like a certain style of music not only because they like how it sounds, but because they identify with it and feel that it speaks to them. Hip hop is perhaps the most potent example of this, growing out of local roots (the marginalised South Bronx in New York) and globalising from there. In its early days, hip hop was an artistic variation of the competition between street gangs, and a welcome one at that, turning tension


PERHAPS WE ENVY THE SIMPLE LIVES OF THE TRIBALS THAT ARE STILL UNCLUTTERED BY TAX RETURNS AND PHONES THAT WON'T SYNC

into expression. It was out of this idea that Afrika Bambaataa, a pioneering hip hop DJ, formed the Zulu Nation, whose original intention was to take reformed South Bronx gang members and organise them into dance and musical movements. Everything about Zulu Nation, including its name, suggests the welcoming commonality of a tribe.

TRIBALLY WIRED

So, as the Sentinelese and the uncontacted Amazonian Indians go about their daily lives, wondering about the aircraft and boats they sometimes see but are otherwise remote, perhaps there are elements of their lives that we cannot only learn about, but that we already have without realising it. No matter how complex modern life becomes, we will always gravitate to a sense of shared belonging. To a tribe. ●





ARU, FROM ETHIOPIA,
CARRIES WOOD AND
A GOAT ON HER HEAD,
BOTH OF WHICH CAN
BE BARTERED AT THE
LOCAL MARKET

CAPPED IT

HEAD GEAR

EACH OF US HAS DAYS WHEN
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INTERNATIONAL PORTRAITS.
FLORIANE DE LASSÉE TELLS
DANIEL SEIFERT ALL ABOUT IT

F

rench photographer Floriane De Lassée has travelled across some of the world's most rural landscapes, from East Africa to South America; in search of subjects for her ongoing photo series, *How Much Can You Carry?* Beginning her journey in 2012 in Ethiopia, the series has so far taken the 37-year-old around 14 different countries across four continents, where she has photographed 70 subjects. Her set was published in 2014 into a book, available in both English and French. As part of the shoot De Lassée travelled with her boyfriend, Nicholas Henry, from Ethiopia to Rwanda, Madagascar, Namibia, Turkey, Nepal, India, China, Indonesia, Japan, Bolivia and Brazil.

The first question has to be; how did this idea come about? When was the moment you realised you wanted to travel the world, shooting pictures of things people balance on their heads?

I wanted to give another breath to my ongoing work, *Inside Views*, which was mainly located in megacities. I was seeking something new. In 2011, my boyfriend asked me to travel with ►



THIS PAGE BIGAWA
FROM NEPAL USES A
HEAD STRAP TO CARRY
FOLIAGE

LEFT DOKALIA FROM
INDIA CARRIES HER
BAMBOO BED



INDONESIAN ELLY
CARRIES HER
DAUGHTER FARRA



CAPPED IT



HYATT SMILES
BENEATH A PILE OF
RED CUSHIONS IN
ETHIOPIA



LEFT CASIM SELLS ODDS AND ENDS, INCLUDING SUITCASES IN A VILLAGE IN WESTERN RWANDA

THIS PAGE SHASHEMENE FROM SOUTH ETHIOPIA, CARRIES A HUGE BUNDLE OF WATER BOTTLES



► him around the world for 14 months. I thought, why not?, and said yes; without really thinking about where we would end up, and whether it would be interesting for my photography. Our first stop was Ethiopia, where I was struck by the sand and blinding sun — it was the exact opposite of what I was expecting or looking for. Yet being somewhere completely new and unexpected, forced me to open my eyes and really find a decent idea for my photography, an idea that was far away from my past projects.

I chose some of the destinations we visited, including Istanbul, Kyoto, New Caledonia and Bolivia, while some were Nicholas' choice. But I didn't realise that Ethiopia would be totally outside my artistic reference. When we started our African tour [four months through Ethiopia, Rwanda, Madagascar and Namibia], I was pretty lost. So this series, *How Much Can You Carry?*, initiated in Ethiopia, is totally different from what I'm used to shooting.

Because I had no idea of where the project would end up, I decided to go for a run every morning. On these sandy roads, I passed by courageous women who were carrying heavy loads to or from the market. Exchange is their only way to survive, and I wanted to pay homage to these women, who display such impeccable strength and balance.

Were you inspired by any other artists in the way you shot the portraits?

No, it came from a scratch in my mind, and from what I saw with my own "tourist" eyes. Though later on, after I put the series together, I discovered these images of Nigerian truckers and their trucks [by Roberto Neumiller]. Those spoke to me a lot.

What would you want people to take away from this set?

At first sight, *How Much Can You Carry?* is a tribute to the bearers of life — those whose lives are heavy, and where smiles and laughter become the keys to a liveable existence. But it can be read on two levels. The first refers to these modern caryatids [sculpted female figures used as architectural support, in place of a column or a pillar]. The second, more metaphorical, talks about the various weights we all carry, whether they are physical or psychological — ►



LEFT SIDNEIA BALANCES SOCCER BALLS IN THE VILLAGE OF REDONDA, NEAR FORTALEZA, BRAZIL

THIS PAGE JESSICA WAS PHOTOGRAPHED AT ENDA SOCIAL CENTRE NEAR LA PAZ, BOLIVIA. THE CENTRE IS RUN FOR YOUNG STREET GIRLS. OFTEN VICTIMS OF VIOLENCE AND SEXUAL ABUSE, THEY HAVE FEW BELONGINGS AND RELY ON DONATIONS



► like the weight of tradition, legacy, education, family, or of social difference.

I feel the series can be understood by all, ranging from those on the deep roads of Africa, to trendy art collectors in the big cities. Everybody can be inspired, because everybody has a weight to carry. Now that the series is completed and a book has been published, I'll take a step back — and see that this is not so much the “burden” that matters, but the way we have to carry it and who can support us.

Travelling the world for this shoot, what did you learn that surprised you?

I think everywhere in the world, people carry things. They carry wood to keep warm, water to drink and to keep clean, animals such as goats to eat (meat, milk and often blood too) seeds (like wheat or quinoa) — and even children on their shoulders. As I understand it, the ratio of men to women in Africa (and in a lot of places around the globe) who carry these big loads, is around one to eight.

In most cases, did your subjects understand what it was that you were trying to achieve with the images?

It depended on the level of education in each region. But ultimately, it's not important that everybody understood; at least if they had fun, it was already a pleasure for all of us to share the moment. The kids, who were less shy, approached first, and then the parents followed. It's very uncommon for them to have crazy people like me coming into a village; and setting up a backdrop in the middle of nowhere — before shooting images like the one with four goats on the head, for example. My local assistants received good remuneration, and my models were “paid” with essential goods. As the photos are in digital, I could also give all of them a small print, to keep in their homes. Few tourists ever offer that sort of moment and souvenir to them.

In opposition to the tourists who pass by and “grab their soul” with a photo, I first spent some time in each place. After few days, most were happy to see that I was doing this for art. And that most of all, I was seeking to give them dignity. They looked proud to take their own images away with them. ►



► **Did you get any sense that the act of carrying something so immense on your head might become extinct?**

No, I don't think so. People will always carry things, for many decades more, because in a lot of remote areas there will never be roads.

Which of your photographic subjects do you remember the most? Do you have a favourite?

Anga from Indonesia, [left] is one of my favourites. She looks like she has a gigantic girly dinnerware set on her head. But if you look closer, you can see she's got such a strong and sad gaze. That seems to signify the weight of responsibility she may have in her numerous family roles, cleaning the dishes or clothes. She was so brave.

I would imagine many of them asked if you wanted to try balancing what they had to balance on your own head! How did that go?

Of course, I could not carry what they carry, for sure — but they had a lot of fun, with me trying to carry water jars. To tell you the truth, in some cases, I helped them out with a rope, and then I'd delete the string digitally. My aim was to give them back their pride for a time — but certainly not to break their necks.

How did your shoot make you reflect on your own world? It's hard not to look at your photos and think, "If I had to limit my possessions to those I could physically carry, what would they be?"

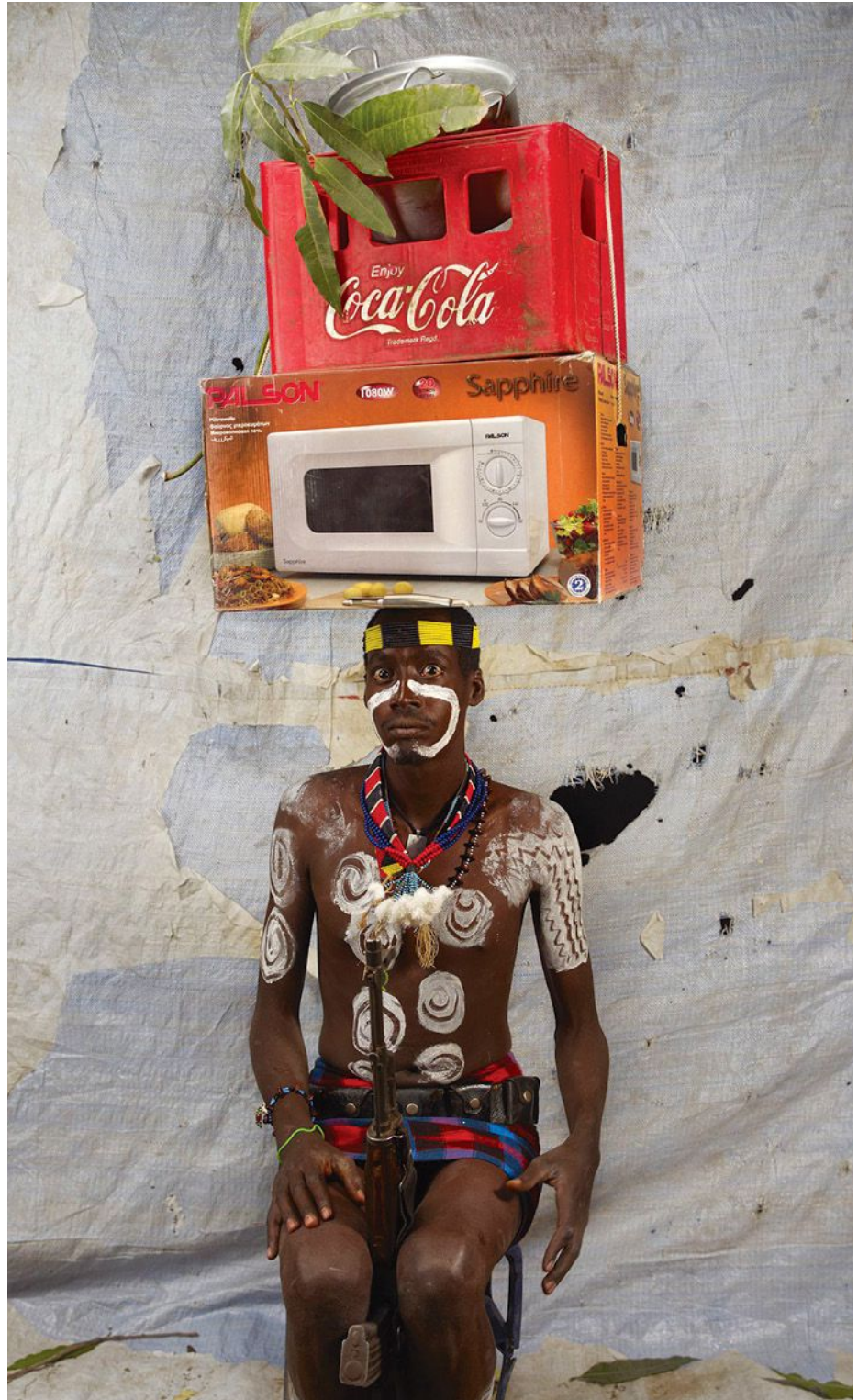
A great question! I had a friend in Germany who had a tiny car, and each time he moved to a new place, he had to fit everything into his car. It was hard. Then he had a girlfriend and he had to remove more and more each time, to fit her in too. Maybe somehow my inspiration came from him too.

We are consuming more and more in our modern world; but at the same time, at least now there are so many websites for sharing and exchanging goods and services instead of buying new ones. Generations before us, you would buy something for life — now you buy, then exchange, and these objects can have hundreds of lives. ►

LEFT THIS PICTURE OF ANGA FROM INDONESIA; IS THE PHOTOGRAPHER'S FAVOURITE IMAGE FROM THE SERIES

BELOW WATER IS SCARCE IN THE SOUTHERN PART OF

ETHIOPIA, IN THE VALLEY OF THE OMO RIVER. THE MEN OF THE HAMER TRIBE DO NOT KILL FOR GOLD OR ANIMALS, BUT FOR WATER. GALE, KEEPS HIS KALASHNIKOV RIFLE CLOSE TO HIM NIGHT AND DAY



FLORIANE DE LASSÉE
TRAVELLED TO SOME OF
THE WORLD'S MOST REMOTE
LANDSCAPES TO CAPTURE
THE IMAGES, INCLUDING THIS
PHOTO OF 'RED BASANTI'





CARLO'S
SINCE 1910
CITY HALL
BAKE SHOP



CAKE BOSS

Mon-Fri 7:30PM



TER FROM
NEPAL CARRIES
HER SIBLINGS

► **What were the challenges of this shoot, in terms of setting up your shots and communicating with your subjects? Did you want them to look completely natural or posed?**

Their backs were bent sometimes, but always with a straight neck and a concentrated gaze. But mainly, I wanted them to look proud of themselves. The project is universal, we don't need to speak the same language. As long as I could show them the results in the camera or on my computer, they were happy. In person, they couldn't always appreciate the results, because I used flash lights. So they needed to come closer to my computer to see.

What gear did you use? Was it tricky to decide on the kind of equipment, and whether to say, shoot in black and white versus colour?

I used black and white between the ages of 14 and 24 years old. It's essential to attain this knowledge, and to feel the balance and construction of an image. But for me now, to "see" in black and white is a tool. My final result will always be in colour. Concerning the choice of camera, unlike a lot of projects where I still shoot with a large format camera, in this one the results had to be seen immediately by my models and other villagers, so a digital camera was naturally the right choice.

I love the shot, of the child in the red sweatshirt balancing cords of wood — and a baby goat! How did that shot come about?

Aru was the first image of the series, and also my first ever portrait. I was shy at the beginning of the series too, and worried that my photographs were looking nothing like they had in the previous 10 years. Then I posted this image on my Facebook page, and it was met with such enthusiasm. So thanks to my social networks, I was given the courage to continue in this direction. Thank-you to my friends and followers! Aru is a young Ethiopian girl who makes a living from selling goats and goat meat, milk and blood to the market. Wood is essential for the family to boil, cook and to heat the home. There is less and less wood in their area — and they have to go increasingly far to get some. ●



EIGHT MAJOR CITIES STRIPPED NAKED, BARING IT ALL.

STRIP THE CITY

ALL NEW SEASON
COMING THIS APRIL



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LAST OF THE SUMATRAN ORANGUTANS

THE RAINFORESTS ARE RAPIDLY DEPLETING,
THREATENING THE SUMATRAN ORANGUTANS
WITH IMMINENT EXTINCTION. PHOTOJOURNALIST
SANDRA HOYN INVESTIGATES

MILITARY PERSONNEL AND A
FIREFIGHTING TEAM DOUSE THE
FLAMES OF FOREST SPOT FIRES
IN RIAU PROVINCE, INDONESIA.
MANY OF THE BLAZES ARE
DELIBERATELY LIT TO MAKE WAY
FOR PALM OIL PLANTATIONS

T

o me photography is a language that knows no bounds, one that bridges different cultures. Even though I am a foreigner who may not speak the language of a country that I visit, photography provides a visual language that I can understand, and an entrance into the lives of others. As such, I find photography an interesting way of life, because I can never predict what's going to happen around the next corner.

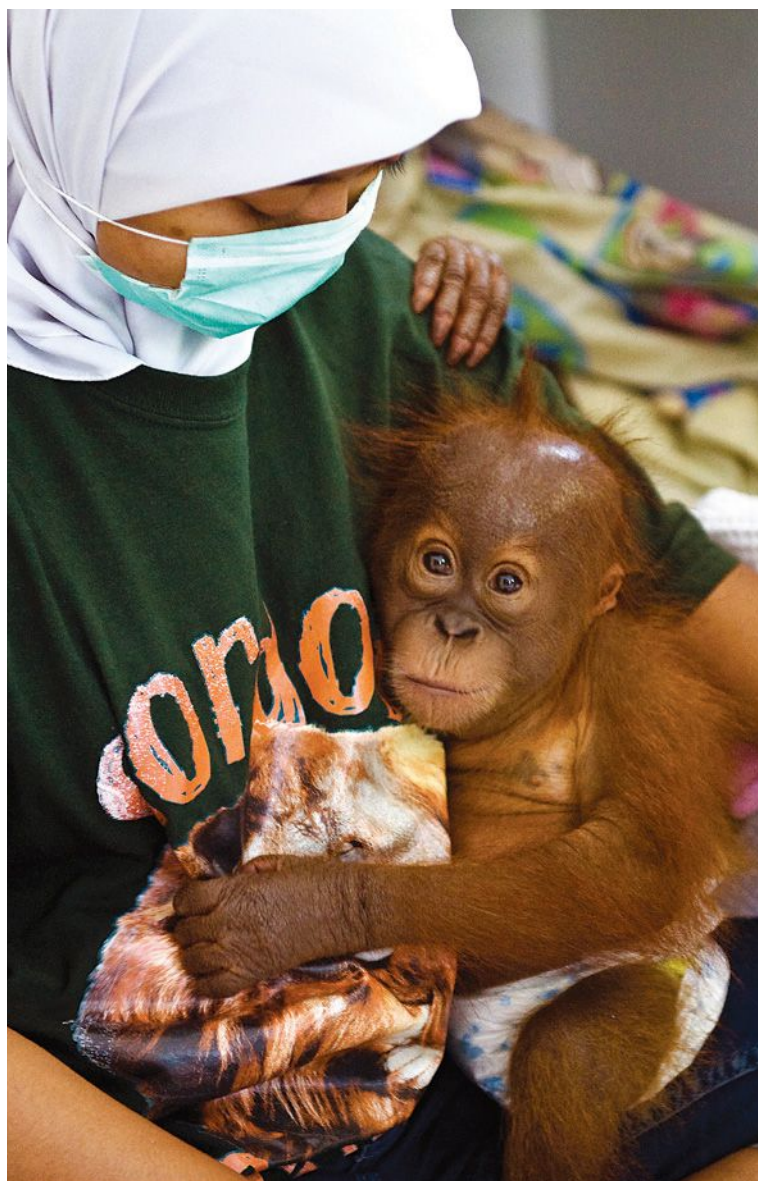
While it's a wonderful way to get to know the world, I often chance upon stories of a people whose voices have been traded away — either for a profit, or to uphold

the justice or injustice of the status quo. But this is not a story about those who are losing, or have lost in a struggle between men. It's a story about the survival of nature, in the face of man's destruction of its forests.

PALM OIL ECONOMY

When I arrived in Sumatra in March 2014, something about the lush greenery was amiss. It didn't take me long to notice that hectare after hectare of wild, native trees had been slashed, to make way for distinctly manicured rows of oil palm. In stark contrast to the taller trees native to the land, stubbles of oil palm stood guard as the economic pillars of Indonesia. From the year 2000 to 2012, it has been estimated that 60,000 square kilometres of primary forests in Indonesia have been destroyed for economic purposes, a landmass comparable to the size of Ireland or Sri Lanka. It now beats Brazil for yearly forest destruction. Oil palm plantations are blamed for replacing four-fifths of the ►





THE OBJECT OF MY AFFECTION

MALE ORANGUTANS HAVE BEEN KNOWN TO FORM CRUSHES ON HUMAN FEMALES WITH RED HAIR. ONE OF PERTH ZOO'S APES, 39-YEAR-OLD ALPHA MALE HSING HSING, HAS EVEN PULLED OUT PHOTOS OF NICOLE KIDMAN FROM A MAGAZINE WHICH HE KEEPS IN HIS ENCLOSURE. IN FACT, IN AN *ANIMAL PLANET* EPISODE OF *IN THE WILD*, ACTRESS JULIA ROBERTS WAS GRABBED BY AN AMOROUS MALE!



TOP LEFT PALM OIL PLANTATIONS ARE REPLACING FOUR-FIFTHS OF THE RAINFOREST IN INDONESIA, WHICH IS A MARKET LEADER IN GLOBAL PALM OIL PRODUCTION. MASSIVE DEFORESTATION TO MAKE WAY FOR THE PLANTATIONS IS CLAIMING MANY VICTIMS SUCH AS ORANGUTANS AND INDIGENOUS PEOPLE LIVING AS NOMADS IN THE FOREST

ABOVE A BABY MALE ORANGUTAN NAMED SIBOY AT THE SUMATRAN ORANGUTAN CONSERVATION PROGRAMME (SOCP) WHICH HAS HELPED OVER 280 ORANGUTANS RESCUED FROM PALM OIL PLANTATIONS, POACHERS AND PET OWNERS

LEFT A BOAT CARRIES TRUCKS WITH ACACIA WOOD. THE FAST-GROWING ACACIA TREES ARE POPULAR WITH PAPER PRODUCERS

FAR LEFT FIREFIGHTERS FROM THE MILITARY PREPARE FOR AN OPERATION TO FIGHT FOREST FIRES

PEELING BACK THE LABEL



LIPSTICK

PALM OIL IS USED IN LIPSTICK AS IT HOLDS COLOUR WELL, DOESN'T MELT AT HIGH TEMPERATURES, AND HAS A SMOOTH APPLICATION AND PLEASANT TASTE



PIZZA DOUGH

PALM OIL IS ADDED TO BOTH FROZEN AND FRESH PIZZA DOUGH TO STOP IT FROM STICKING TOGETHER AND TO ENHANCE TEXTURE



INSTANT NOODLES

PALM OIL IS UP TO 20 PERCENT OF THE WEIGHT OF A PACK OF INSTANT NOODLES. IT'S USED TO PRE-COOK THE NOODLES SO THAT YOU JUST ADD HOT WATER



SHAMPOO

PALM OIL IS USED AS A CONDITIONING AGENT THAT HELPS RESTORE THE NATURAL OILS OF THE HAIR THAT ARE STRIPPED AWAY BY MOST SHAMPOOS



ICE CREAM

PALM OIL MAKES SOME ICE CREAM SMOOTH AND CREAMY



PACKAGED BREAD

AS IT'S NATURALLY SOLID AT ROOM TEMPERATURE, STABLE AND VEGETARIAN, PALM OIL IS NOW WIDELY USED ACROSS THE BAKING INDUSTRY





ANGELO, A 14-YEAR-OLD MALE ORANGUTAN WAITS FOR A MEDICAL EXAMINATION IN THE SUMATRAN ORANGUTAN CONSERVATION PROGRAMME CENTRE IN NORTH SUMATRA. HE WAS FOUND WITH AIR GUN METAL PELLETS EMBEDDED IN HIS BODY IN A PALM OIL PLANTATION

► Sumatran rainforests. Yet, they continue to expand their operations — determined perhaps, to bring a country with about 100 million people who live on USD\$2 or less a day out of poverty. As of today, Indonesia supplies half of the world's palm oil used in food and cosmetic products produced by agribusinesses. Ironically, palm oil is also processed into biofuel that has reportedly been “sustainably sourced”.

It's not an easy task to protect the forests. Many people know about this problem, but one of the reasons it persists, is that people have no way to abstain from purchasing products with palm oil. There is no law that says that businesses have to include or declare using palm oil on their product packaging.

ORANGUTANS ARE ONE OF HUMANKIND'S CLOSEST RELATIVES, SHARING 96.4 PER CENT OF OUR DNA.THEIR BEHAVIOUR IS ALSO VERY HUMAN-LIKE

Slashing, logging, and felling trees are but a part of the problem. The other part is when fires are deliberately started to remove large swathes of trees to “rejuvenate the land”. Some believe the fire nourishes the ground, making it more fertile to grow oil palms.

The second part of my journey, then, involved chasing fires in Riau Province, Sumatra. Renting a car, I tried to locate the fires using the coordinates and a map that a non-



ABOVE DEFORESTATION CLAIMS MANY VICTIMS, INCLUDING ORANGUTANS SUCH AS 14-YEAR-OLD ANGELO, WHO WAS RESCUED WITH GUN METAL PELLETS EMBEDDED IN HIS BODY

RIGHT MANY BLAZES IN SUMATRA ARE DELIBERATELY LIT TO MAKE WAY FOR PALM OIL PLANTATIONS, SUCH AS THIS BURNED FOREST IN RIAU PROVINCE

LEFT STAFF MEMBERS AT THE SOCP CENTRE TAKE ANGELO'S FINGERPRINTS



governmental organisation (NGO) contact had provided me. En route to the scene of a fire, military firefighters were speeding. I followed them.

Armed with hoses that tapped into nearby streams, “waterbombs” from a helicopter, and oddly, their guns, the military firefighters tackled the fires efficiently and professionally, working as if they’d repeated this routine many times. At that time it was the dry season, and the flames swiftly and easily consumed the trees. While I found it difficult to breathe as the noxious fumes from the smoke choked and seared my throat, military men stood in the empty field, enjoying a casual cigarette.

At the end of the fight, the charred remains of trees stood feebly as shadows of the former, grander canopies — their ashes fallen to the ground, scattered as if remnants of some post-apocalyptic disaster. With their homes wrecked to this point, I wondered if those who belonged to the forests had managed to escape the catastrophe.

THE JUNGLE PEOPLE

In the Malay language, orangutans are known as orang hutan, or literally “people of the forest”. While I collected photographs of other animals such as the pygmy elephants and Sumatran tigers that shared the forests, one of the reasons I chose to focus on the orangutans was because they’re so human-like.

The orangutan is one of humankind’s closest relatives, sharing 96.4 percent of our DNA. And it endlessly fascinates me to witness how similar their facial expressions, behaviour and gesticulations are to ours. They appear to me as versions of humans, only ►

JULIA ROBERTS MEETS AN ORANGUTAN

AS THE A-LISTER TOLD *THE DAILY MAIL* AFTER HER ENCOUNTER: “HELD TIGHT IN THE POWERFUL HANDS OF A 20-STONE ORANGUTAN — AN ALPHA MALE APE WHO THOUGHT I WAS A DOLL — I WAS JUSTIFIABLY TERRIFIED.

BUT THEN I RELAXED — SOMEHOW I FELT I COULD TRUST HIM. I WAS IN BORNEO, ONE OF THE CHAIN OF ISLANDS THAT MAKE UP INDONESIA. SOMEWHERE IN ITS VAST, TROPICAL RAINFOREST I HAD COME FACE TO FACE WITH THE INCREASINGLY RARE ORANGUTAN — A CREATURE THAT LIVES VERY MUCH AS OUR ANCESTORS DID, A REMINDER OF OUR PREHISTORIC PAST.

HE WAS ENORMOUS AND I WAS SCARED. BUT HE SEEMED OBLIVIOUS TO MY PRESENCE, AND I WAS CONVINCED HE WASN’T INTERESTED IN ME. WE SAT TOGETHER ON THE PATH AND WHEN HE FINISHED EATING AN APPLE HE CAME CLOSER. I WAS STILL NERVOUS BECAUSE HE WAS SO HUGE, AND THE CLOSER HE GOT TO ME, THE SMALLER I FELT. HE HAD QUITE A LONG BEARD AND WAS SMELLY.

HE REACHED OUT TO ME, BUT I KNEW INSTINCTIVELY THAT HE DIDN’T WANT TO HURT ME. HE WANTED TO PLAY AS THOUGH I WAS A DOLL, OR CARRY ME OFF AND HAVE A SMOOCH. HE GOT ME IN A STRONG GRASP AND WOULDN’T LET GO. IT GOT A BIT OUT OF HAND, BUT I KNEW HIS INTENTIONS WERE PLAYFUL AND SO I THINK THAT HE PAID ME A COMPLIMENT.”

THREE WONDERS OF SUMATRA

ORANG PENDEK

A LOCAL VERSION OF BIG FOOT, THIS MYTHICAL "SHORT MAN" HAS SUPPOSEDLY BEEN SPOTTED BY LOCALS AS IT RAIDED CROPS SUCH AS SUGAR CANE

SUMATRAN RHINOS

ANOTHER FUZZY ORANGE MEMBER OF THE FORESTS, THIS SMALLEST MEMBER OF THE RHINOCEROS FAMILY IS LESS THAN 1.5 METRES TALL, AND COMPLETES ITS CUTE LOOK BY BEING BORN WITH A SOFT LAYER OF FUZZ

GHOST SHIPS

PLTD APUNG 1, A 2,600 TONNE FLOATING POWER STATION, HAS BECOME A MONUMENT TO MOTHER NATURE'S POWER. FORMERLY A SEAGOING VESSEL, IT'S NOW AN UNLIKELY INLAND ATTRACTION. IN 2004 IT WAS FLUNG BY THE INDIAN OCEAN TSUNAMI ONTO SUMATRA, WHERE IT REMAINS TO THIS DAY

WORKERS
TRANSPORTING
OIL PALM FRUIT IN
LANGKAT, SUMATRA





► more serene, less aggressive and more at peace with themselves, as they swing freely from tree to tree in the wilderness.

As arboreal creatures, or animals living atop trees and spending little time on the ground, orangutans are highly dependent on and connected with the trees of the forests. This means that any wreckage done to the forest disturbs their habitat and food supply.

Once abundant in food, the forests, now shrunk, have forced the hungry orangutans to scour the ground, and look elsewhere to eat, such as in the neighbouring palm oil plantations where armed workers and poachers lurk, imperiling their numbers. In the past century, 230,000 or more orangutans roamed the forests of Indonesia. Today, while Bornean orangutans have an estimated population of 41,000, their endangered Sumatran cousins now number a mere 7,500.

OIL PALM PLANTATIONS ARE BLAMED FOR REPLACING FOUR-FIFTHS OF THE SUMATRAN RAINFORESTS. YET THEY CONTINUE TO EXPAND THEIR OPERATIONS

Orangutans are not the only beings affected by the depleting forests. The Orang Rimba, or the Kubu People, are nomadic people who used to call the lowland forests of Sumatra home. Approximately 3,500 of them live as hunter-gatherers near the Bukit Tiga Puluh National Park in Jambi, Sumatra. ►

► As forests shrink in size, they now live on the cusp of modernity — displaced, uncertain and afraid. I met a boy named Penghijau who told me that he prefers living in the forests, where he doesn't need to worry about money or food. He said, his family fears that they will be forced to relocate to the city.

SIBOY AND ANGELO

The final length of my sojourn was spent near Medan in North Sumatra at the Batu Mbelin Orangutan Quarantine Centre operated by the Sumatran Orangutan Conservation Programme (SOCP). Since inauguration, rescue teams from the SOCP have saved around 280 orangutans from poachers who work to protect the palm oil plantations as well as from pet retailers. These orangutans have since been released back to the wild.

I was not permitted to touch them, unless they cleared me for infections. But it was in the centre that I had more personal encounters and made observations about how curiously human they really are. As if it were performing in a comedy, I saw a “teenager” literally monkeying around, wheeling itself on a wheelchair with one hand, and holding a mirror in its other hand to peer at its reflection. One of the ways that we can communicate with orangutans is via body language. During feeding time, for example, the SOCP staff lined up a row of vegetables, which the orangutans could point at, and choose what they preferred to have for dinner.

I got acquainted with Siboy and Angelo, two male orangutans who were rescued and whose grim, poignant stories painfully remind us about those





AN ORANGUTAN LIVING IN THE GUNUNG LEUSER NATIONAL PARK IN BUKIT LAWANG

RIGHT PENGHIJAU LIVES AS A NOMAD, ORANG RIMBA, BETWEEN TRADITION AND MODERNITY IN A PALM OIL PLANTATION NEAR THE BUKIT TIGA PULUH NATIONAL PARK. APPROXIMATELY 3,500 ORANG RIMBA STILL LIVE AS HUNTER-GATHERERS IN THE FORESTS OF SUMATRA. BUT THEIR HABITAT IS THREATENED BY ILLEGAL FIRES AND DEFORESTATION **(TOP)**



who were not as fortunate. Siboy, a one-year-old baby orangutan, was found on sale in a market in Aceh, North Sumatra. Poachers and traders are willing to take the risk of capturing an infant orangutan (by clubbing or shooting its mother) and selling it even though it's illegal to trade animals. Infants like him are coveted as pets, and thus command a better price. On the other hand, Angelo, a 14-year-old, was injured by metal pellets that oil palm plantation workers and villagers had shot at him, out of fear that he would attack them.

RESCUE TEAMS HAVE SAVED AROUND 280 ORANGUTANS FROM POACHERS WHO WORK TO PROTECT THE PALM OIL PLANTATIONS, AND FROM PET RETAILERS

I had a lot of fun with Siboy, the mischievous baby, when he played and looked inquisitively at his surroundings from a “cot” made from tree trunks and some loose pieces of cloth. Every time the SOCP staff tried to put him to bed, he started crying, and clung onto her shirt more tightly. When I tried to snap pictures of him, he would try to grab my camera or my blouse, goading me to touch him when he knew that I couldn't.

While baby orangutans such as Siboy have to be kept in their facility for three years before they can be reintroduced to the wild, adult orangutans such as ►

N
7,600

THE FUTURE POPULATION OF THE SUMATRAN ORANGUTAN

SOURCE: "AN IMPACT ANALYSIS OF SYNTHETIC PALM OIL: OUTLINING A NEW APPROACH TO ETHICAL CONSIDERATIONS" BY UNIVERSITY OF MANCHESTER IGEN TEAM, HUMAN PRACTICES, 2013

N = INITIAL POPULATION SIZE

3,000

2,625

2,250

1,875

1,500

1,125

750

375

0

10

20

30

40

50

60

70

80

90

100

YEARS



N:0

PREDICTED EXTINCTION OF ORANGUTANS, BASED ON DEFORESTATION DATA (2.36% ANNUAL LOSS OF RAINFOREST COVERAGE)



N:426

PREDICTED SUMATRAN ORANGUTAN POPULATION LEVELS, IF DEFORESTATION IN INDONESIA WAS HALTED AFTER 40 YEARS



N:0

PREDICTED EXTINCTION OF SUMATRAN ORANGUTAN, IF ANNUAL LOSS OF RAINFOREST COVERAGE COULD BE HALVED (1.18%) IN 30 YEARS, WITH AN INITIAL POPULATION SIZE OF 2520 INDIVIDUALS



N:1,929

PREDICTED SUMATRAN ORANGUTAN POPULATION LEVELS, IF DEFORESTATION IN INDONESIA WAS HALTED AFTER 30 YEARS



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ORANGUTANS HOLD THE
HAND OF A STAFF MEMBER
FROM THE SUMATRAN
ORANGUTAN CONSERVATION
PROGRAMME



POACHERS AND TRADERS ARE WILLING TO TAKE THE RISK OF CAPTURING AN INFANT ORANGUTAN BY CLUBBING OR SHOOTING ITS MOTHER

► Angelo are released into one of the protected national parks in Sumatra after a 30-day quarantine, if they are found to be free of disease.

PICTURE PERFECT

The camera and the photographs don't lie and the viewfinder is a kind of portal of truth, from which others can access the things we photographers witness happening around us — and in turn feel the spectrum of

emotions we feel. I'm sceptical when others say that a single photograph can create an impact large enough to change the world. It would be great if it could, but it remains quite a tenuous objective.

To me though, the photograph of Angelo, a great ape of such an impressive size lying motionless on the operating table, contains the single key message from my six-week journey through Indonesia.

Staff from SOCP told me that if he had not been rescued from the oil palm plantation, it's likely he would have died. In this photograph, he was sedated and asleep the whole time that the operation lasted. This was done to dislodge the pellets from his body. But his eyes were still open, and it also appeared that he was looking at me — as if trying to tell me something in a language that we somehow all understand. ●



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FLIGHTS OF FANCY



AS IF HUSTLING ACROSS THE SKY IN A METAL TUBE IS NOT SCARY ENOUGH, WE ALSO HAVE TO CONTEND WITH SCARY RUNWAYS. FROM THOSE THAT SKIRT SKYSCRAPERS TO ONES THAT GO ACROSS HIGHWAYS, **CHRIS WRIGHT** BUCKLES UP FOR THE RIDE OF A LIFETIME

2



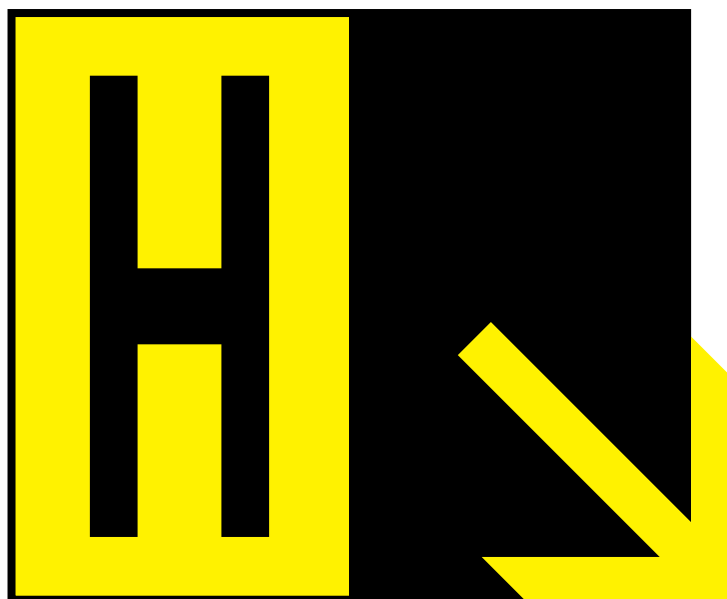


PHILLIP POLLARD WAS ON HIS MAIDEN TRIP AS A FIRST OFFICER AT QANTAS, AND IT WAS A GREAT ONE. FROM SYDNEY THROUGH TO HONG KONG AND BANGKOK, THEN BACK TO HONG KONG, SINGAPORE AND SYDNEY. AFTER FIVE YEARS IN THE BACK SEAT FOR TAKE-OFFS AND LANDINGS AS A SECOND OFFICER, THIS WAS A BIG MOMENT

PHOTO AFP



A BOEING 747-400 JUMBO JET, FLIES OVER THE KAI TAK AIRPORT CONTROL TOWER AS IT APPROACHES RUNWAY 13 ON THE LAST DAY OF THE 73-YEAR-OLD AIRPORT'S EXISTENCE IN 1998



is captain handled the landings on the way out — and then, as an expression of confidence, invited Phillip to fly the sector back from Bangkok to Hong Kong, including the landing. “This was quite a gesture for the captain, given that I had just finished my First Officer training,” Phillip tells *Discovery Channel Magazine*. That is putting it mildly, because back then, Hong Kong’s airport was Kai Tak.

Kai Tak! To this day, even 16 years after its closure, people still get misty-eyed, or have panic attacks, talking about this most extraordinary of airports. These days, you can only make out the shape of the old runway, as a new cruise terminal sits on top of it, and landings instead take place on the edge of Lantau Island, in efficient and airy Chek Lap Kok. But for 73 years, Hong Kong’s air traffic came into Kai Tak, and the airport was a part of the city’s soul, the perfect representation of the borderline chaos of Hong Kong’s commercial fervour.

From the passenger’s perspective, the landing was as memorable as any could be. You would start descending over

green Lantau Island, before settling in to an approach with the hills behind Kowloon to your left, and Hong Kong Island visible over to the right. Down and down you would go, until to your left and right, you were flying among Kowloon’s buildings — skyscrapers that were now considerably higher than the plane.

From your seat, you could pretty much see what the inhabitants were watching on TV, and make out individual items of laundry hanging on poles from the windows. Then you’d start banking right, and further and further and further right, as alarm rose in your gut. This can’t be right, you’d think, trying to compensate for the turn with your body, as if shifting your bottom a bit to the left would bring a jumbo jet back on its axis.

And then finally, finally, you would begin to level out, just feet from the ground — before you hammered down onto the runway, reverse thrust firing instantly as the pilot sought to stop the plane pitching into the harbour at the other end. Then as you taxied parallel to the runway, another plane would land, and another, and another, until you were finally bussed from

the apron to the dismal and decaying terminal. Glad to be alive — and on the ground in Hong Kong.

If it was memorable for the passengers, imagine what it was like for the pilots. Unlike many modern airports, where jets can be landed through autopilot if necessary, this one was pretty much entirely manual. There was a sloping red and white checkerboard painted on a hill, designed for pilots to aim at — a rare example in modern aviation of being required to aim your huge commercial jet straight at a mountain. Even then, it was of limited use.

“The checkerboard was a visual aid, but was often not sighted until just before the final turn whenever the visibility was down due to smog,” says Pollard. And smog was, and is, ever-present in Hong Kong. That turn itself was the stuff of legend: 47 degrees to the right, directly over hundreds of thousands of people in densely packed Kowloon, in a turn that commenced at an altitude of 600 feet and finished at around 200 feet.

Even worse, the turn would often start without a visual of the runway. Instead, pilots say, ►

► the key to it was a pattern of lights on the ground. “There was a series of sequenced strobe lights arranged in an arc which were very useful to help with the runway alignment,” Pollard recalls.

From the ground, it even used to be possible to go and stand on top of the checkerboard, if you knew where to find it. You had to sneak through a hole in a fence behind a tennis court to get there. If you did, you would be in the unique position of watching jumbo jets aiming directly at your head, before tearing off to one side, so close that you could inspect the quality of the jet’s individual tyres.

MOST AIRLINES SAY 500 FEET IS YOUR LAST CHANCE TO BAIL OUT AND GO ROUND AGAIN. AT KAI TAK, YOU COULDN’T EVEN LEVEL YOUR WINGS UNTIL 300 FEET

From this angle, the magnitude of what pilots were being asked to do was apparent, and there was just no equivalent anywhere else in the world, turning a jet that big, that sharply and that low. From that angle, too, you could see what would have become apparent to pilots as they finally levelled out — that at the end of the runway was Hong Kong harbour. On one memorable occasion, a China Airlines jumbo went off the end of the runway during a typhoon, ending up largely submerged in the harbour. Mercifully, nobody was seriously hurt.

There was another problem. There was no simple

way to bail out of a landing. “Most airlines say 500 feet is your last chance to bail out and go round again,” another pilot tells us, speaking under condition of anonymity. “At Kai Tak, you couldn’t even level your wings until 300 feet.” Yet in its day, this single-runway airport was the third busiest in the world, taking 30 million passengers a year.

And how about Pollard’s maiden landing at the controls? “It went well. The weather was on my side,” he recalls. Several years later, he saw the captain from that trip. “I said, ‘You won’t remember this, but you gave me an IGS [an electronic guidance system which, at Kai Tak, took the pilot in to 675 feet before he had to take over manually] into Hong Kong on my first trip,’ the pilot recalls. “He said, ‘How could I forget that, Phil! You were so tense that morning.’”

“Which is true, but I thought I successfully hid my tension. Obviously not.” It was a sector that captains normally took for themselves — and Pollard didn’t make captain until after Kai Tak’s closure. “So I think I only got to fly the approach myself two or three times. But they were good times.”

MOUNTAIN LANDINGS

There is something exhilarating about a crazy airport. Kai Tak may be gone, but there are many others still receiving regular commercial flights every day. Some have difficult approaches because of mountains or altitude, others with weather or wind shear, some with short runways, and some with surrounding buildings or roads. Others combine them all — together with a road running across the runway. But we tend to love them, as passengers, at least once we’re on the ground recounting our

HITTING THE SLOPES

For an example of a weirdly sloping runway, look at Courchevel in the French Alps, a roller coaster of a runway that undulates like a wave and then turns into a ski jump. Partly, this is because it was carved out of a mountainside and options were limited. And partly, because the slope helps to slow an arriving plane, provided of course that the pilot reads it correctly and doesn’t go nose-first into the slope. If nothing else, it also prepares the skiers for the terrain they are going to go down under their own steam after arrival.



tales of survival. And pilots too, like to be challenged.

In Asia, two airports that are commonly considered among the most extreme in the world are Lukla in Nepal and Paro in Bhutan. These two have a lot in common: they are at high altitude: Paro is 7,200 feet (2,195 metres) above sea level, while Lukla is 9,200 feet (2,804 metres). Each has a short runway too, shorter in fact than their altitude above sea level Paro’s is 6,444 feet (1,964 metres), Lukla’s an eye-watering 1,509 feet (460 metres) with

a 12 percent gradient, uphill for landings, downhill for departures. And they each require pilots to snake their way in between Himalayan peaks in order to make the approach.

The Paro landing involves a steep left-hand bank in order to line up, while the Lukla one involves pretty much aiming at a cliff, with absolutely no way of bailing out once approach has been started. Both can be hit by unpredictable weather — and both only permit activity in daylight hours, with frequent

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COURCHEVEL AIRPORT, FRENCH ALPS

COURCHEVEL IS HOME TO SOME STUNNING SLOPES SKIIED UPON BY LITERAL JETSETTERS, MANY WHO ARRIVE BY PRIVATE JET OR HELICOPTER. IN 1996 AN ARABIAN PRINCE COMPLAINED THAT IT WAS COSTING HIM A COOL ONE GRAND EVERY DAY TO PARK HIS PRIVATE JET AT THE AIRPORT. NO DOUBT THAT PRICE HAS INCREASED MIGHTILY IN THE PAST DECADE.



outright cancellations. It is commonly said that only eight pilots in the world are certified to land in Paro, although *DCM* has been unable to verify this and we suspect that it dates from the time when only Druk Air was allowed to fly there. Currently, only three airlines fly there.

Lukla, or Tenzing-Hillary airport, as it is also known, carries a surprising number of flights in high season: up to 30 a day from Kathmandu, although it's only 85 miles away. The reason is that Lukla

is the starting point for many trekkers wishing to walk to Mount Everest. Many leave Nepal saying that the airport, rather than any element of the hike to the world's highest mountain, was the scariest part.

It is by any measure a truly preposterous airport, once named the world's most extreme by a TV documentary. That 12 percent gradient, over the modest length of the runway, is equivalent to a 10-storey building. It is also generally used as a short cut by locals,

who have to be warned off with a siren once a plane is on approach. Still, if a plane on departure gets to the end of the ski-jump like runway and isn't going fast enough, there's a 2,000 foot (610 metres) drop at the end of it in order to gather some speed.

That sort of cliff-top edge to a runway is not particularly unusual, and can actually be quite helpful, in the sense that a plane lacking sufficient thrust would rather meet a lot of emptiness at the end of the runway than something it has to actually get over.

Another notorious example is that of Matekane in Lesotho, which like Lukla has a drop of 2,000 feet, considerably longer than the actual runway, 1,312 feet (400 metres), even shorter than Lukla. It is not uncommon for aircraft taking off in Matekane to go off the end and descend first, before gaining enough thrust to get up again.

COMING UP SHORT

A short runway always brings a frisson to a landing, and the Caribbean seems to excel in them, a function of being a collection of islands with limited space for runways. ►

► Still, the outright length of the runway isn't really the point, so much as the size of the aircraft attempting to land there. For example, you will have seen pictures of Princess Juliana Airport in St Maarten (or St Martin depending on whether you are from the Dutch or French part), because the approach comes in directly over a beach and the short runway requires pilots to land right at the start of it.

WHEN PLANES GET READY TO TAKE OFF — SOME PEOPLE EVEN HANG ON TO THE CHAIN LINK FENCE AT THE END OF THE RUNWAY, AND WAIT TO FEEL THE FULL THRUST OF A DEPARTING JET

The surprising thing is not that the recently extended 7,150 feet (2,179 metres) length is particularly short, but that fully-loaded Boeing 747s land there, as it's a hub, particularly for Dutch and French tourists, for the rest of the Caribbean. "The runway is quite long and wide for most small to medium sized aircraft," says Captain Ariel Weiss, a pilot who has flown many light aircraft into the airports of the Caribbean. "However, the large ones, such as the 747 and Airbus A340 might consider the runway on the shorter side," he says. "All pilots must be trained and tested to perform short-field landings. The large planes have to touch down by a certain point of the runway and apply heavy braking and reverse thrust, to stop the

plane in time." Consequently, Maho Beach, beneath the approach, has become one of the world's greatest plane spotting locations. In the local beach bar, the Sunset, they thoughtfully write flight times and airline numbers in chalk on a surfboard, so that people will know when to be ready to stand right underneath the approach, if they dare.

The particularly foolhardy even take part in another ritual when planes get ready to take off — hanging on to the chain link fence at the end of the runway, and waiting to feel the full thrust of a departing jet. When that jet is a KLM jumbo, this thrust can be enough to blow people right back into the water — surely the only place where one can legally be exposed to the full departing power of a Boeing 747. Incidentally, there is a European equivalent of St Maarten in the Greek island of Skiathos. A video on YouTube of a landing shows a 737 almost clipping the fence on the way in.

From the pilot's perspective, notwithstanding the concern that one might wipe out a tourist with one's thrust, the challenge of Princess Juliana is different to what tourists expect. The approach is straight in and very easy, apart from the fact that approaches low over sea can become disorientating, but this applies to thousands of airports.

Of far greater concern to a pilot is the fact that the take-off involves facing straight at a mountain, requiring a quick ascent and a rapid turn. Passengers, unable to see straight ahead in their plane, will probably never be aware of this. "It is especially challenging for the heavy Airbus A340 operated by Air France," says Weiss. "When they are very heavy it is really noticeable, as they depart and



THE APPROACH TO THE PRINCESS JULIANA INTERNATIONAL AIRPORT ON THE ISLAND OF ST. MAARTEN IN THE CARIBBEAN COMES IN DIRECTLY OVER A BEACH (BELOW) WITH PLANES OFTEN CASTING SHADOWS OVER THE BEACH



PRINCESS JULIANA AIRPORT, ST MAARTEN

SHORT, SWEET, AND OFT-IGNORED. THAT'S HOW YOU'D SUM UP THE SIGN PLACED BETWEEN RUNWAY 10 AND MAHO BEACH. IT READS: "DANGER: JET BLAST OF DEPARTING AND ARRIVING AIRCRAFT CAN CAUSE SEVERE PHYSICAL HARM RESULTING IN EXTREME BODILY HARM AND/OR DEATH"

WORDS



clear the villages and then the mountains." The 747 is a bigger plane, but it doesn't take off full of fuel, that would be impossible, and instead, usually flies to a nearby island such as Guadeloupe or Martinique, to fill up before crossing the Atlantic.

Just a few miles from St Maarten is St Barth's — arguably even more challenging for the pilot as it involves an approach between mountains and unbelievably close to a road, before landing on a tiny airstrip 2,100 feet (640 metres) long. If overshoot, it's straight into the sea. Only small aircraft are allowed to land here, and pilots are required to do a large number of training flights before being allowed to go solo.

"The runway is a bit on the shorter side, but then again it's nothing that most light aircraft can't handle," says Weiss. The big issue from his perspective is the terrain, and the wind. "When landing on the runway heading into the east, one needs to clear a pretty tall hill located on the short final approach and then dive for the runway," he says. "In most cases, the ground clearance is about 50 feet (15 metres)."

It is bumpy in the wind, the runway is hardly visible to pilots on approach, and the landing must be at the start of the runway, followed by instant braking. "If one is too fast, stopping is likely not going to happen — and the aircraft ends up in the sand or sea. And people will be swimming in the lovely Caribbean waters in their clothes before they've cleared immigration and customs," Weiss says, half-joking. "This has happened quite a few times." Winter makes things still worse, as the wind conditions become stronger and less predictable. And then there's Saba, which makes St

Barth's landing strip look like Heathrow. At 1,300 feet (396 metres) long, it is the shortest runway in this story, shorter than Lukla or Matekane and about the same as a typical aircraft carrier. This one, cut into the edge of a mountain, features huge drops to the ocean on three sides, including the end, and it has a difficult approach involving flying at a cliff before a last-minute left bank.

You can see a video of an approach here on YouTube where the circumstances are so extreme that the plane's alarms start going off — Too low! Terrain! — even though it's a perfect approach. It's white-knuckle stuff. It is rare indeed to find anyone at all who's allowed to attempt it these days. "Getting a permit for Saba is pretty much impossible to anyone with the exception of two companies who are commercial carriers," says Weiss.

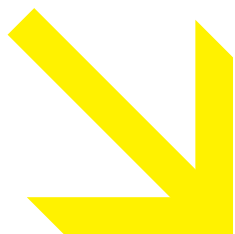
"These companies I understand play a political role, so as not to allow others to land there in order not to compete with their business. I have practiced extremely low approaches into Saba some years ago, just to see if I could do it."

HEAVY TRAFFIC

Elsewhere, some pilots find the proximity of people a particular challenge. In North America, aside from challenging Rocky Mountains airports like Eagle County Airport near Vail, the airports most commonly known as difficult are San Diego and Orange County. San Diego stands out because it is the busiest single-runway airport in America and is surrounded by the city. It involves an approach right over the top of the parking garage.

Orange County's John Wayne Airport has challenges which are different again, ►

9.259



JUANCHO E. YRAUSQUIN AIRPORT, SABA

IF PILOTS TODAY NEED A DOSE OF GUTS TO LAND ON THIS SHORT RUNWAY, THEN TAKE YOUR HAT OFF TO REMY F DE HAENEN, WHO FIRST LANDED HERE IN 1959 ON A STRIP JUST RECENTLY CLEARED BY LOCALS.

12MIN

SABA'S OFFICIAL TOURIST SITE DOESN'T PULL ANY PUNCHES, REALISING THAT ITS RUNWAY ITSELF IS AN ATTRACTION. THE FLIGHT FROM NEIGHBOURING PRINCESS JULIANA AIRPORT IS SHORT BUT SWEET, THEY WRITE: "ONLY TWELVE MINUTES BUT WHAT A TWELVE MINUTES THEY ARE!"

► combining a very short runway by jet aircraft standards, with a noise abatement policy which forces a steep climb — or a sharp turn after landing, depending on the direction of departure. It's also a rare example of a runway where pilots actually use the full power of their aircraft, in some cases cycling their engines to full power with the brakes on, before letting them go at full thrust.

In other places, the problem is the wind. This is the sort of area where a passenger's perspective might be quite different from

a pilot's, because to most of us, an airport can look pretty straightforward. But then, we can't see the wind. For example, Pollard notes that Chek Lap Kok, the new airport to replace the creaking and crazy Kai Tak, is actually not as simple as it might at first appear. "The new airport at Hong Kong can be quite challenging, with strong winds blowing across Lantau Island," he notes.

A manual that Qantas pilots use says this about the airport: "Of serious concern... is the wind shear caused by winds blowing across Lantau Island. Lantau has

four distinct hills separating three deep valleys and these valleys, because of their unique topography, inflict a dangerous influence on any wind from 090 degrees to 230 degrees. The wind blowing through each valley accelerates due to the Venturi effect of the curved and narrowing gap. As it passes through the gap it is tapered into a narrow stream of air."

Within it, a 15 knot wind becomes a 60 knot wind, but will be sandwiched between slower airflows passing around and over the

island. "The result can be devastating, as an aircraft approaching or departing the airport may have to transverse several layers of wind blowing at either 15kt or 60kt. Furthermore, these winds may become microbursts if they are deflected towards the ground." Hong Kong, being in a typhoon area, gets plenty of this kind of weather. Most people flying in would have no idea.

A far more notorious airport for wind shear is in New Zealand's capital city of Wellington, which combines



PHOTO: AFP



AN AERIAL VIEW OF THE AIRPORT ON THE CARIBBEAN ISLAND OF SABA. THE RUNWAY IS CUT INTO THE EDGE OF THE MOUNTAIN AND IS SURROUNDED BY OCEAN

a short runway with ferocious winds due to the channelling effect of the Cook Strait between New Zealand's North and South islands. The only time that an unmodified commercial Boeing 747 has ever landed here was as an emergency landing by United Airlines in 1991, when Auckland was fogbound and there wasn't enough fuel to get to Christchurch.

There are lengthy videos in circulation showing nothing but planes trying to land at Wellington. Sometimes they even appear to be going

sideways — which is because they are going sideways.

Meantime, some airports are tricky due to their quirky surfaces. Barra Island in Scotland's Outer Hebrides, which Flybe.com's LoganAir arm flies to daily from Glasgow, is a relatively straightforward approach and departure — except for the fact that the runway is made of sand. It's actually a beach. This is the only scheduled flight in the world to land on a beach, and the runway is washed away again each night. The schedule for flights

literally changes with tides.

Then most extreme of all, there are the runways on the ice cap near the North Pole, or on the sea ice off the coast of Ross Island in Antarctica. These are cleared each year for the summer, and present a host of other challenges, even though you wouldn't really call them mainstream airports. You would call Narsarsuaq in Greenland mainstream though, and it's an absolutely beautiful approach — yet it requires flying up a fjord in order to get in. Pilots must be locally

qualified, and no night-time activity is permitted.

Some airports combine a multitude of difficult conditions. Take Gibraltar. It's not enough that the bulk of the tiny territory's land is taken up by a huge rock, which leaves only a small piece of land jutting into the sea to serve as a runway. Or that the wind conditions are truly treacherous, combining the Levanta wind that flows towards the Atlantic, the weather systems over the Iberian peninsula, the cloud that hangs over the rock, and the turbulence created by it, which produces downdrafts and crosswinds on the runway, which is completely and endlessly unpredictable.

LUKLA IN NEPAL AND PARO IN BHUTAN ARE CONSIDERED TWO EXTREME AIRPORTS IN ASIA. EACH HAS A SHORT RUNWAY AND CAN BE HIT BY UNPREDICTABLE WEATHER

It's also that, because of constant tensions between the British and the Spanish over who should own Gibraltar in the first place, flights are not allowed to use Spanish airspace, despite Gibraltar being on the edge of Spain, which means pilots have to make a 90 degree turn that wouldn't otherwise be necessary. And if that wasn't enough, how about this? There's also a four-lane highway that runs straight across the runway. When you land, you see traffic held back by barriers on either side.

Funchal on the Portuguese ►

► island of Madeira is another classic. It is cut out of the side of the mountain and hangs onto a coast with a runway that extends over the sea on stilts. There are mountains right next to the shoreline, which create very strong and turbulent winds, with dramatic shifts just at the moment the pilot is trying to put the plane down. It's also prone to seabirds, a big problem if one gets stuck in an engine. It used to be much worse though: the runway has been almost doubled in length over the years, yet going off the end of it creates the prospect of plunging into the sea.

MOST PILOTS AGREE THAT A DIFFICULT AIRPORT IS MADE EASY BY NICE WEATHER AND THE EASIEST AIRPORT CAN BE A KILLER IF MOTHER NATURE SAYS SO

One other airport combines everything that's potentially hard about a landing: Toncontin International (code: TNT), which serves the Honduras capital of Tegucigalpa. It is, or at least it was, the international airport with the smallest runway. It involves a complicated step-down approach among mountains, exceptionally close to a hill and a road, through an arc with a sharp turn at the very end to line up with the runway. Like many Latin American airports (Quito and La Paz are others) it is at high altitude, and receives mountain weather, which can change very quickly, bringing

poor visibility or wind shear where it is not expected.

It has a cliff at the end of the runway with a road at the bottom of it, not ideal when planes are struggling to slow down anyway. Like Kai Tak, it is a manually flown approach, and also like Kai Tak, it involves a turn made very close to the ground, historically at about 150 feet (45 metres). It has since improved: the runway has since then been extended by 900 feet (274 metres) by removing a hill, the one that was previously known to have impeded the approach. But pilots say from their perspective, it doesn't change all that much: the terrain and the weather are still significant challenges.

EASY RIDERS

Pilots though, don't get too hung up about things like approaches. They have other concerns, which would never occur to most passengers. "Most pilots would agree that a difficult airport is made easy by nice weather and the easiest airport can be a killer if Mother Nature says so," says Phillip Pollard. "Despite all our modern equipment on board these days, Mother Nature still has the final say and provided we respect her, aviation will remain one of the safest modest of transport." He is, of course, absolutely right on this. Statistically air travel into even the most notorious airports is vastly safer than going anywhere in a car. And his airline, Qantas, has the finest jet-age safety record of them all.

And even the weather is secondary to another concern we passengers don't think about. And that's fuel. "Obviously any airport is challenging when the weather is bad, but we pilots say: there are no weather worries, just fuel worries. Provided you



have plenty of fuel to divert to somewhere else where the weather is better, or fly around in circles until the weather improves, the bad weather conditions at your intended destination are manageable," he says.

Pilots generally seek to land with at least an hour's worth of fuel in the tanks. The legal minimum in Australia, for example, is 30 minutes, but nobody wants to cut it that fine. Which is easy to plan around if you know bad weather is coming. But what if you don't? "It gets interesting," says Pollard, with understatement, "when the bad weather, like fog or a thunderstorm is unexpected, and you don't have enough

fuel to go somewhere else." Yet, he says, despite having over 18,000 hours behind the controls over 30 years, he has been exceptionally lucky.

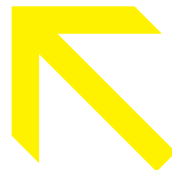
And luck is the point. Not just the luck of avoiding danger, but the luck of living this life at all. Pilots also get the best views in the world on a daily basis, practising a craft that most of them love — and for many of them a tricky approach just gives them a rare opportunity to use all their skills in an otherwise increasingly automated age. It is perhaps, a life that is fading into the past, yet there are still airports around that allow pilots to be not just supervisors but aviators. And flying is the better for them. ●

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Place of Publication: New Delhi
 Periodicity of its Publication: Monthly
 Printer's Name: Ashish Kumar Bagga
 Nationality: Indian
 Address: Ashirwad, A 4/2, DLF City Phase I Gurgaon 122 002
 Publisher's Name: Ashish Kumar Bagga
 Nationality: Indian
 Address: Ashirwad, A 4/2, DLF City Phase I Gurgaon 122 002
 Editor's Name: Jamal Shahid Hussain Shaikh
 Nationality: Indian
 Address: 13, Manvendra Apartments, 16th Road, Bandra West, Mumbai-400050

Names and Addresses of individuals who own the newspaper and partners or shareholders holding more than one percent of the total capital:

Owner: M/s. Living Media India Limited, K-9, Connaught Circus, New Delhi – 110 001.

Shareholders holding more than one percent of the total capital of the owner company:

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Dt: 01.03.2015 Sd/-
 Ashish Kumar Bagga
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WHAT'S ON

THIS MONTH ON DISCOVERY CHANNEL



The Man Who Doesn't Breathe

In *The Man Who Doesn't Breathe*, Stig Åvall Severinsen will be attempting to break three jaw-dropping world records requiring incredible skill, extreme physical fitness and intense dedication. His ultimate challenge is to break his own record and hold his breath underwater for over 20 minutes. This documentary chronicles the incredible journey Stig embarks on, from the expert examination he undergoes, to swimming under a frozen lake with and without a wetsuit, before he tackles the unimaginable task of defying nature in the most dangerous record attempt yet.

MONDAY AT 9 PM ON MARCH 9





Food Factory

Behind each bag of chips, can of beer, bar of chocolate, and loaf of bread is a mega-industrial production line that brings each product to the masses. *Food Factory* is a mesmerising behind-the-scenes peek into the weird and wonderful processes that produce everyone's favourite foods. From fresh ingredients to finished products, the series reveals in awe-inspiring detail just how mass-produced favourites are really made. Put on a hard hat and get ready to meet the food.

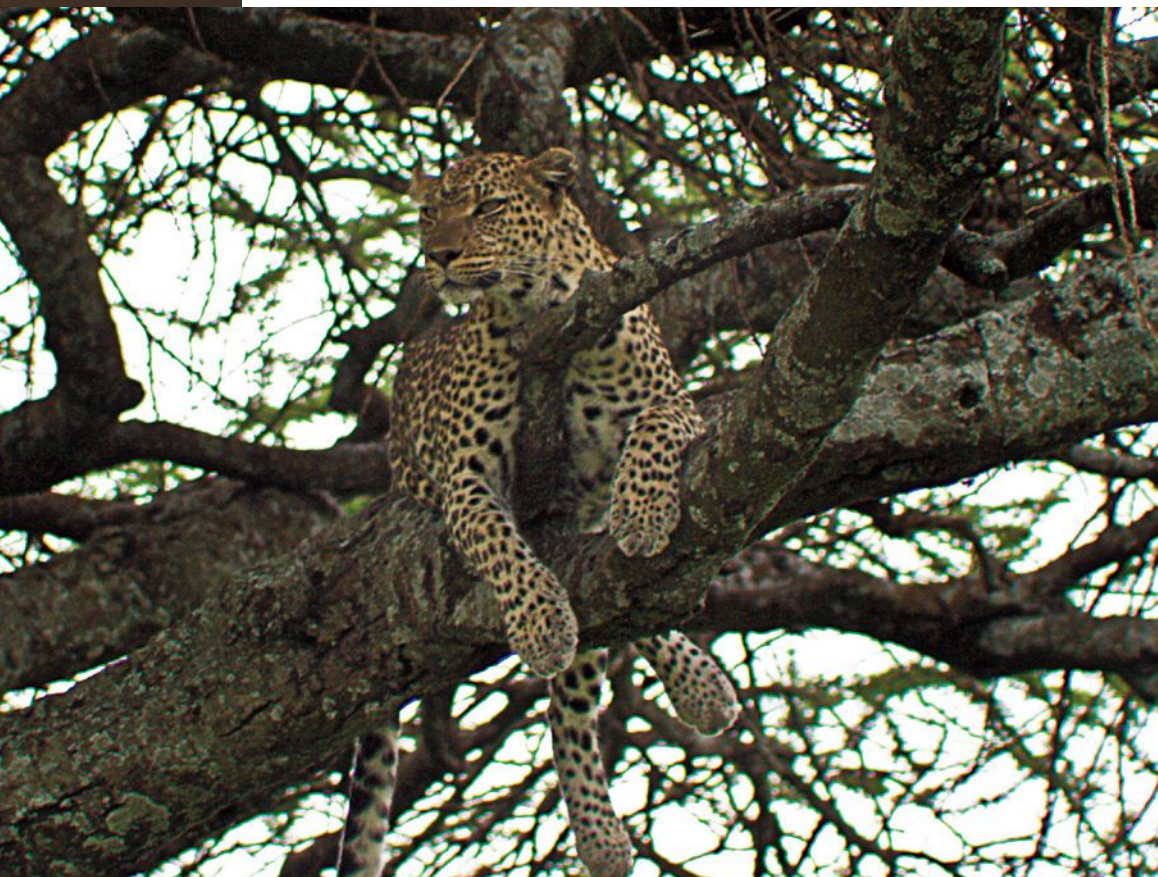
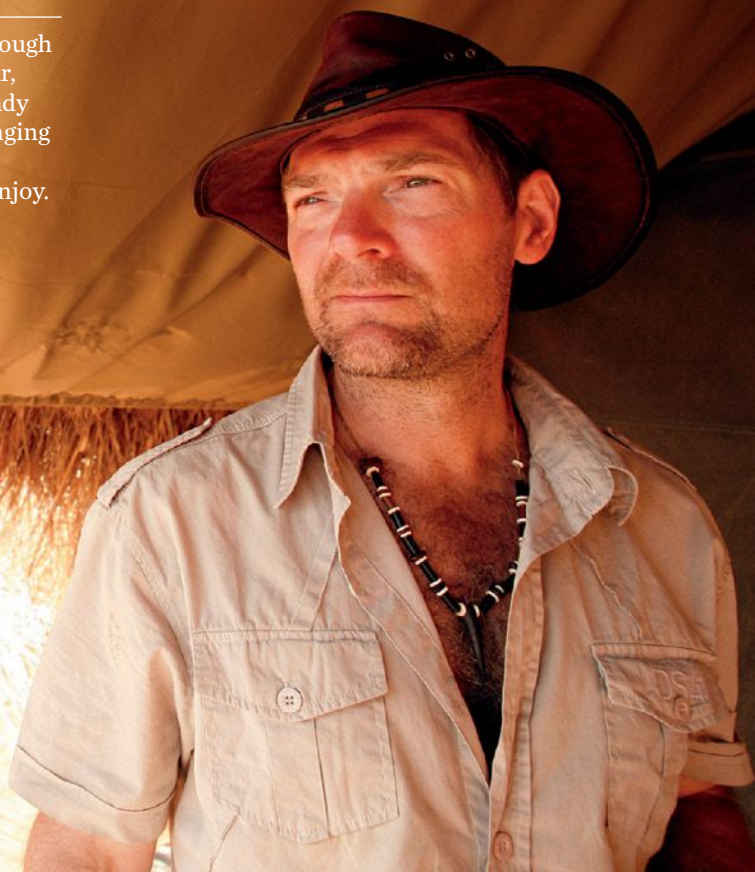
MONDAY TO FRIDAY AT 8 PM, STARTING MARCH 2



Survivorman

In *Survivorman*, Les Stroud returns to the most captivating and tough wilderness settings as he survives with little food, no water or gear, and no safety or camera crew. He adds new challenges to his already gruelling assignment. Whether doubling his time in the wild, bringing his son along or searching for Big Foot, Stroud brings his classic survival experience with exciting new twists for his audience to enjoy.

TUESDAYS AT 10 PM, STARTING MARCH 17



Life Story

From the moment they are born, every animal on the planet begins the same great and perilous journey – life. Told from the perspective of individual animals, this series follows the journey from birth to parenthood. Each episode of this captivating series focuses on one stage of life, starting with those crucial first few days and moving through the challenges of the grown up world – from power struggles to the search for a suitable mate – and finally parenthood where survival of their own offspring, their legacy, becomes life's purpose.

THURSDAYS AT 9 PM, STARTING
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